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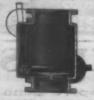
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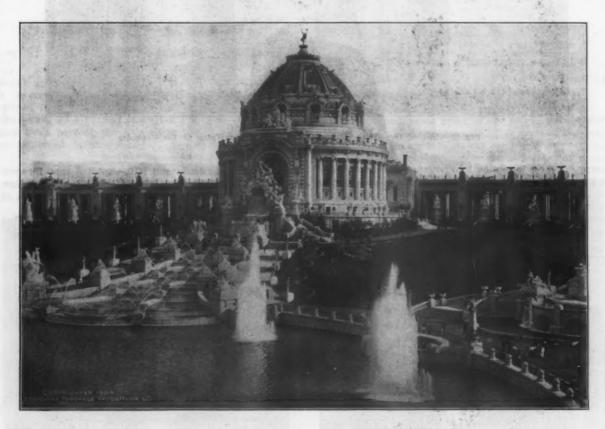
Pumping and Air Compressing Machinery at the St. Louis Exposition.—I.

A Review of the Latest Achievements in These and Allied Branches of Engineering.

Pumping machinery has occupied a prominent place at the great expositions. The first commercial centrifugal pump, a device which has witnessed rapid development during the last year or two, was one of the chief features at the London Exhibition in 1851. At the Centennial Exhibition, in 1876, a gold medal was awarded to Henry R. Worthington for his duplex system of steam pumps, which the judges considered "a positive advance in the art of moving water under pressure by means of pistons." Extensive exhibits of pumping machinery were also made at the Cotton Centennial at New Orleans in 1884, the Inventions Exhibition at London in 1885, the

The Grand Cascades.

No American exposition is considered complete without startling water effects, and the Cascades pouring down from Festival Hall to the basin form one of the most striking features of the St. Louis Exposition. The waterfall is divided into three parts, a large middle cascade and two smaller ones at the sides, any one of them considerably larger than many waterfalls utilized for power in New England. The water for these artificial cascades is drawn from the grand basin and circulated over and over by a pumping station located under the left wing of Festival Hall at the foot of the east



THE MAIN CASCADES AT THE ST. LOUIS EXPOSITION.

Paris Exhibition of 1889, the Columbian Exhibition at Chicago in 1893, the Paris Exhibition of 1900, and the Pan-American Exposition of 1901. As an example of the importance of the pump exhibits it may be mentioned that at both the Columbian and the 1900 Paris Expositions the firm of Henry R. Worthington occupied an entire building, exhibiting machinery of all classes from boiler feed pumps to water works pumping engines, as well as numerous auxiliary devices, such as vacuum pumps, condensers, cooling towers, &c. The Paris exhibit of this company contained four duplex type pumping engines, each of 10,000,000 gallons daily capacity. The exhibits of pumping machinery at St. Louis are characterized by the great variety of apparatus shown and the refinement to which the design of machines for special purposes has been carried.

cascade. This is believed to be the largest electric pumping station in the world. It is further remarkable in that the pumps are of the turbine type and operate against a total head of 159 feet, each handling 35,000 gallons per minute and being driven by a direct connected induction motor. One of these sets is shown in Fig. 1. The maximum daily capacity of this pumping plant is 165,000,000 gallons, or about three times the daily water consumption of St. Louis.

From the crude and inefficient low lift centrifugal pump the builder of these pumps, Henry R. Worthington, has developed a high lift and high efficiency pump of wide application within the field hitherto occupied exclusively by displacement pumps. It differs from other centrifugal pumps in that "diffusion" vanes are placed in the opening between the impeller and the discharge chamber for

the purpose of bringing the water to rest without internal shock or commotion. They correspond inversely in function to the guide vanes of turbine water wheels and serve to bring about a nearly complete conversion of the kinetic hours. The supply is drawn through an intake 56 inches wide, 12 inches deep and 750 feet long, with openings at many points in order to avoid creating a strong current in the basin. The water was carefully filtered be-

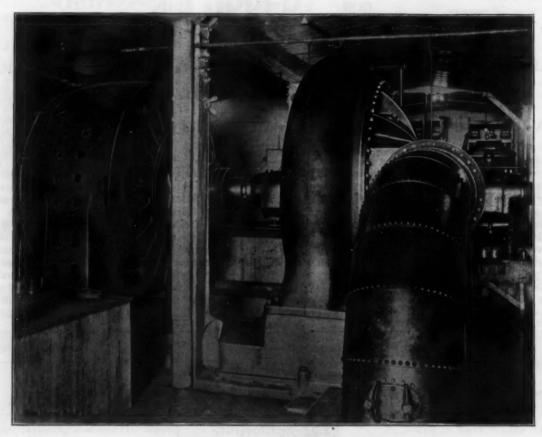


Fig. 1.—One of the Three Turbine Pumps Supplying Water to the Cascades

energy of water in motion into potential energy of water under static head. This permits pumps to be designed for a head of 200 feet or more in one lift, and by placing a number of impellers upon the shaft and leading the water through them in succession 2000 feet or more may be overcome. The Worthington turbine, conoidal

fore entering the basin and it is expected that the continual aëration will keep it pure and clear. The Cascades are each 290 feet long and descend in a series of



Fig. 2.—One of the Four Volute Pumps Used for Handling Sewage at the Exposition.

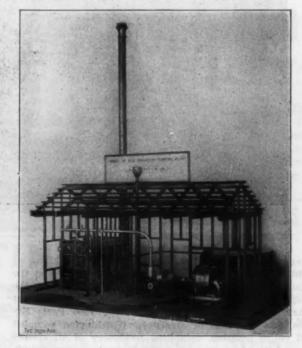


Fig. 3.—Model Irrigating Plant Exhibited by A. M. Lockett & Co. In Agricultural Building.

and volute pumps were described at some length in The Iron Age of April 21, 1904.

Before leaving the subject it would be well to notice some of the more interesting features of the Cascades themselves. It is estimated that the entire volume of water in the basin is circulated every four and one-half 14 falls, the first of which is a sheer plunge of 14 feet into a basin at the top. About 53,000 gallons per minute pass through the main cascade, 23,000 gallons through each of the two sides, and 14,000 gallons through the four fountains in the grand basin. Along the main cascade there are 28 jets playing at the sides, which, with

the Cascades, can be illuminated from below by colored lights. The middle cascade is 90 feet wide at the top, spreading out to a width of 152 feet at the bottom, and the smaller cascades are 20 and 50 feet wide at the top and bottom, respectively. While the specifications call for 90,000 gallons of water per minute, the pumps and motors being designed for an overload of 20 per cent., bring the total maximum capacity up to 115,000 gallons, which is probably the greatest volume of water ever handled at this elevation. The Cascades and their ad-

purpose is to raise the sewage from a well close to the northwest front of the Mines and Metallurgy Building to a branch of the city sewer in De Giverville street, about 250 feet distant. One of these pumps is shown in Fig. 2.

It may be mentioned that the sanitary system of the Exposition includes nine miles of vitrified pipe sewers, 8 inches and larger in diameter, and over a mile of brick sewers. In addition there are several sections of the city sewers built before the inception of the Exposition and a small separate system in the northwestern part

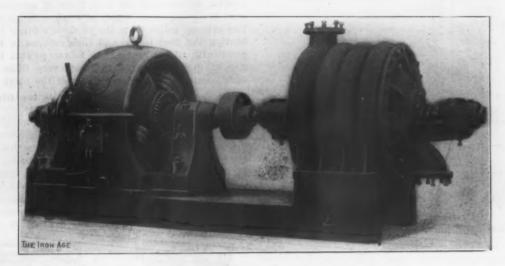


Fig. 4.-A Four-Stage Turbine Pump for High Head Service.

jacent promenades are built of timber and the flooring is covered with painted duck. The space beneath is utilized for storage purposes. This great artificial fall also serves as a cooling tower for the condensing water used by a part of the Exposition power plant, as will be explained later.

Sewage Pumps.

A large part of the drainage from the Exposition grounds is handled by Worthington centrifugal pumps of the volute type, in pavilion 73, between the Mines and

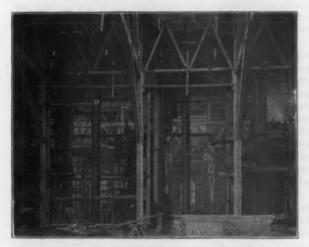


Fig. 5.—Forty-Inch Central Barometric Condensers Connected with Exhaust from Engines in Main Power Plant.

Metallurgy Building and the Lagoon. These pumps resemble the ordinary type of centrifugal pump, but have been carefully designed with regard to velocities, cross sectional areas and angles, enabling them to work efficiently against heads up to 85 feet. It is stated that under test a pump of this type has shown an efficiency of 85 per cent. Because of the moderate heads and velocities diffusion vanes are not used. There are four pumps in the sewage pumping station, which are of the vertical shaft type, permitting the directly connected induction motors to be placed high up above the pump chamber and away from all moisture and dirt. The pumps were designed to operate against a head of 60 feet when handling 3000 gallons per minute each. Their

of the grounds, which connects with the septic tank built by Washington University.

The Alaskan Packers' Association Exhibit.

Another Worthington pump of the volute type is used by the Alaskan Packers' Association to reproduce a very realistic mountain scene in its exhibit, block 16, Forestry, Fish and Game Building. This is a horizontal pump



Fig. 6.—Entrainer on Exhaust Pipe Leading to Barometric Jet Condenser.

and is capable of handling about 2500 gallons of water per minute.

Model Irrigation Plant.

In connection with the Louisiana exhibit of the rice industry, block 101, Agricultural Building, A. M. Lockett & Co. of New Orleans have furnished the commissioners for Louisiana a model of a complete irrigation pumping plant, the original of which was installed for the Southwestern Rice & Canal Company, near Jennings, La. This model, shown in Fig. 3, is on a scale of 1 inch to the foot and shows a Worthington conoidal pump direct connected to a compound condensing engine, the steam being furnished by a duplicate set of water tube boilers and the exhaust being condensed by a Worthington jet con-

denser. The feed water for the boilers is pumped from an open heater by two Worthington boiler feed pumps of the duplex type.

The conoidal pump is especially designed for pumping large volumes against low heads. In general appear-

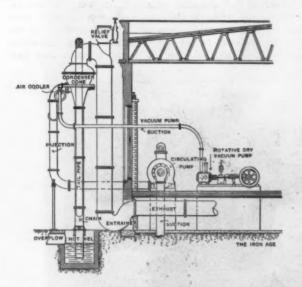


Fig. 7.—Typical Arrangement of Central Barometric Condenser Systems.

ance it is somewhat different from the ordinary centrifugal pump, due partially to the widening of the pump chamber to admit a special form of impeller. The latter consists of a double, cone-shaped core on which radial vanes are mounted. The shape of this core serves to

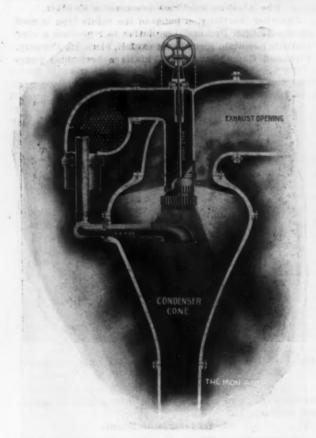


Fig. 8.—Detail of the Cone of One of the Barometric Condensers in the Main Power Plant.

modify gradually the direction of the incoming currents of water, thereby preventing sudden changes of velocity and direction which would absorb and waste power. The pump chamber, or shell, is divided into two equal parts by a radial diaphragm or partition extending entirely around the interior of the chamber and inclosing the base of the conoidal impeller. This partition prevents

the impingement and consequent disturbance of the two entering columns of water. The conoidal pump is especially adapted to belt or electric motor driving. The space required in relation to the quantity of water delivered is about one-half of that needed by an ordinary centrifugal pump. The original of the pump shown in this exhibit was designed to deliver 30,000 gallons per minute against a 20-foot head, and pumps of this type can be used for heads up to 30 feet.

The jet condensing apparatus in this exhibit is of interest as showing the best form of condenser to be used where a natural supply of fresh water is to be had. The exhaust steam from the condenser pump is used in heating the feed water and thus returns to the boiler practically all the heat of the steam, so that the operation of the condenser outfit costs very little, while it adds considerably to the economy of the plant

High Speed and High Head Pumps for Direct Connection to Electric Motors.

In describing the cascade plant it was mentioned that the turbine pump could be applied to high head service by arranging a number of impellers in series. In the exhibit space of the General Electric Company in block 13, aisle B, Mines and Metallurgy Building, such a pump is shown direct connected to an electric motor, a view of which is given in Fig. 4. This pump consists in reality of four separate turbine pumps compactly arranged so

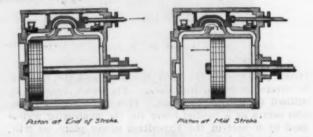


Fig. 9.—By-Pass Arrangement on Vacuum Cylinders of Rotative Dry Vacuum Pumps.

that the whole pump occupies no more space than the motor which drives it. The capacity is 400 gallons per minute against 200 pounds pressure, or about 500 feet head.

One of the difficulties which confronted early designers of high lift centrifugal pumps was the great peripheral speed required when only a single impeller was employed. The multistage arrangement, however, permits the lift to be multiplied three, four, five or more times, while the speed is kept low enough to connect the pump directly to a steam engine or an electric motor. It has been demonstrated by experiment that for heads above 60 to 70 feet multistage pumps are much more efficient than single stage pumps, the higher efficiency being due to the decrease in frictional losses coincident with the reduced peripheral speed of the impeller.

The operation of pumping machinery by electric motors offers, especially in mines, many obvious advantages, such as centralization of the power plant, elasticity of extension of the system, high efficiency and small first cost and expense for attendance. The electric motor enters a widened field of usefulness through the improvement of the centrifugal pump, as the two are perfectly adapted to each other.

Electric driven reciprocating pumps have heretofore had one drawback—namely, the necessity of toothed gearing, belts or other devices to transfer the power from the rapidly revolving motor shaft to the slowly moving crank shaft of the pump. Such devices add to the weight and size of the pumping unit and require either careful attention or frequent repairs. The reciprocating pump designers, however, not to be outdone, have exhibited in the General Electric space along with the centrifugal pump a so-called "express" pump in which these objectionable features have been eliminated by connecting the pump plungers to cranks mounted directly upon the motor shaft of the pump.

This pump, which was built by the Blake & Knowles

Steam Pump Works, has a capacity of about 250 gallons per minute against 1000 feet head when running at a speed of about 300 revolutions. So carefully have the internal parts of the pump been designed, however, that its mechanical efficiency is over 93 per cent., ap-

with mechanically operated valves, but have proved far from satisfactory and in many cases the entire valvemechanism has been removed with beneficial results. Some designers advocate closing mechanically both theinlet and outlet valves, while others favor mechanically

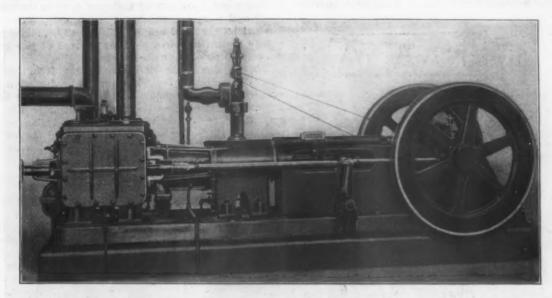


Fig. 10.—One of the Two Horizontal Steam Driven Rotative Dry Vacuum Pumps Exhausting from Central Condenser Outfit.

proximating closely that of the highest type of large, slow moving pumping engines. The pump is of the duplex type, the cranks at the opposite ends of the motor shaft being set at right angles to each other. The plungers are of the outside packed pattern and the two

Fig. 11.—Vertical Steam Driven Dry Vacuum Pump of the High Speed Marine Type.

in the ends of each cylinder are connected by edge rods. The pump was illustrated, with results of a test upon it, in *The Iron Age* of June 30, 1904. The operation of the pump is practically noiseless under all conditions and is unaccompanied by shock or heating.

High speed pumps have been constructed heretofore

opened valves. Again, some constructors operate only one set of valves mechanically. The fact developed by experience is that such complicated mechanisms are useless and lead only to trouble and expense. These pumpsare built in capacity from 200 to 4000 gallons per minute and for heads from 100 to 2000 feet.

The Main Power Plant.

The power required to operate this Exposition, especially when all the exhibits are shown in action, is enormous. It will be remembered that the famous "Jumbo" engine which drove all the machinery at the Philadelphia Centennial was rated at 1000 horse-power. Exposition authorities have arranged to buy about 10,000horse-power from the Union Light & Power Company of St. Louis, but the main dependence will be placed upon a temporary power plant constructed for the Exposition by Westinghouse, Church, Kerr & Co., in block 38, Machinery Hall, and the southeast corner of the Power House. Thisplant will supply about 16,000 horse-power, while other generating apparatus on exhibition in Machinery Hall will bring the total available energy up to nearly 45,000-horse-power. The Westinghouse plant consists of four vertical Corliss engines, complete with boilers and mechanical stokers, coal and ash conveyors, mechanical draft, condensing apparatus, cooling towers, &c.

The condensers, two in number and of the elevated jet type, were furnished by Henry R. Worthington. They are located in the space between the columns supporting the building and the overhead cranes in order to clear the latter, as shown in Figs. 5 and 6. At the junctionof the horizontal and vertical lines of exhaust piping is located a cast iron entrainer, seen in Fig. 6, which forms a water pocket, draining the horizontal pipe and so directing the exhaust steam that it will pick up any water collected in the pipe and carry it along to the condenser in the form of spray. At the top of each exhaust riser is an automatic relief valve, which, in caseof loss of vacuum, provides a safety vent to the atmosphere through a line of vertical spiral riveted pipe extending through the roof. A typical arrangement of the piping for an equipment of this sort is given in the diagram, Fig. 7. A characteristic of this type of condenser is the use of separate water and dry vacuum pumps. Theformer in the present case are three Worthington turbine pumps in the Steam, Fuel and Gas Building, driven by Westinghouse single action engines.

The condenser is elevated about 30 feet above thehot well, and the water descends by gravity against theatmospheric pressure. The vacuum pumps are used toexhaust the air from the condenser and the steam pipesystem. Before the air passes to this pump, however, it is cooled by an air cooler in the injection pipe, shown in detail in Fig. 8, which decreases its volume and practically frees it from water. The dry vacuum pumps differ from other vacuum pumps in that, as the name indicates, no water is used in the air cylinders, the pistons

vacuum pumps are located in Machinery Hall, a short distance from the Westinghouse engines.

The Cooling Towers.

Injection water from the cooling towers for the condensers and the water from the hot well to the cooling

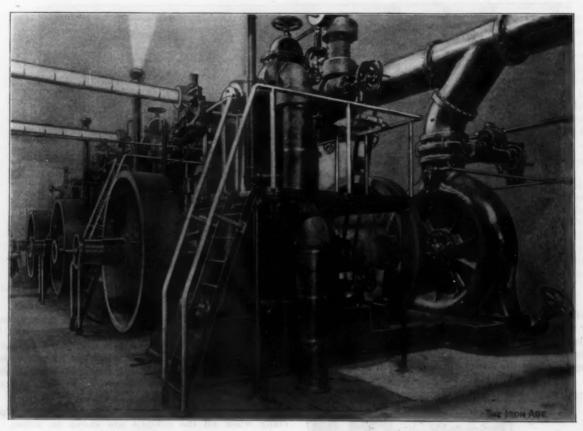


Fig. 12.—Three Single Stage 24-Inch Centrifugal Circulating Pumps in Steam, Fuel and Gas Building.

being lubricated by oil the same as the steam cylinders and the clearance spaces being reduced to a minimum, as To still further increase the efin air compressors. ficiency of this apparatus a small auxiliary valve is used, shown diagrammatically in Fig. 9, which after the exhaust valves have closed opens a passage from one to the other side of the piston and permits the gases in the clearance space to expand into the suction side of the cylinder. Before the piston starts on the return stroke this valve closes and, there being no gas or air under pressure in the cylinder or ports, it draws at once from This method greatly increases both the the condenser. capacity and efficiency of the pump. The absence of water and the positive control of the suction air valve permit a high rotative speed.

Two of the vacuum pumps in this plant are of the horizontal type, a view of one of which is given in Fig. 10. The positive inlet and discharge valves are adjustable by a hand wheel, while the steam is controlled by a slide valve with an adjustable eccentric to vary the point of cut off according to the steam pressure. The suction air valve is positively driven by an eccentric on the shaft, which is so set as to open the ports fully at the proper time, leaving an unobstructed passage for the attenuated air and vapor to enter the cylinder. The steam and air pistons are on a common piston rod.

In addition to the horizontal vacuum pumps there is one vertical pump, shown in Fig. 11, with an inclosed crank case, the air and steam pistons being on independent rods. The other features of the vertical machine, however, do not differ materially from the horizontal machine just described. All three pumps draw from a common vacuum header, which in turn is connected to the cones of the two condensers. The vacuum pumps are supplied with steam from the engine auxiliary piping system, and the exhaust is turned into the main condensing system. The air discharge is led through spiral piping to the roof. The condensers and dry

towers is handled by three Worthington turbine pumps, Fig. 12, driven by Westinghouse single acting compound engines, located in the Steam, Fuel and Gas Building. Under normal conditions one of the pumps handles the injection water, while the other delivers the hot water to the towers, the third being held in reserve,

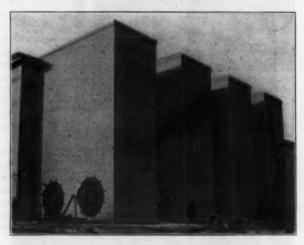


Fig. 13.—Cooling Towers at the End of the Steam, Fuel and Gas Building.

the piping being so arranged that either operating pump may be replaced by the spare pump. Each pump unit is capable of delivering 17,000 gallons per minute against a total head of 80 feet, but the output may be regulated according to the water required by means of hand wheels at the ends of the engine shafts. These communicate with the engine governors, the adjustment of which may be changed while the unit is running. The injection water is supplied to the condensers through a 30-inch

cast iron pipe from the pump room, two 20-inch branches leading to the condenser cones. At the point where the pipe enters the condenser is located the tubular air

at the end of the Steam, Fuel and Gas Building, 200 feet distant. On account of the nature of the soil it was found necessary to support this conduit on piling.

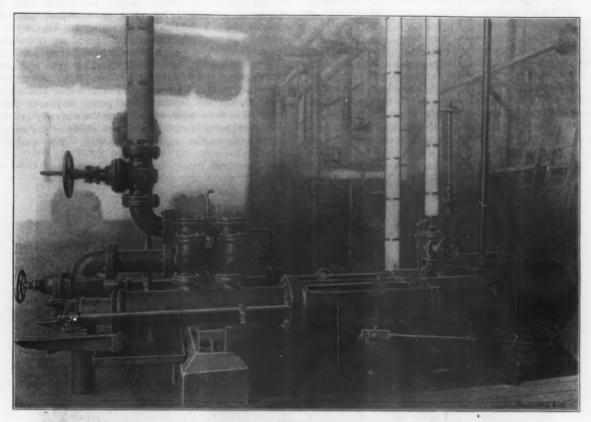


Fig. 14 -One of Two Horizontal Compound Pressure Pattern Duplex Boller Feed Pumps.

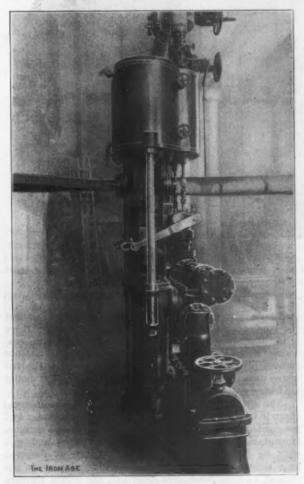


Fig. 15 .- Vertical Admiralty Type Duplex Boiler Feed Pump.

cooler before mentioned. The water from the two condenser hot wells is conducted through a 36-inch tile conduit to a concrete hot well located at the cooling towers There are four towers, as shown in Fig. 13, each consisting of a rectangular brick stack 52 feet in hight and containing ten tiers of wooden grating 20 feet high. Fans are placed in the sides of the towers below the gratings and furnish the necessary current of air to sweep the hot vapors from the tower. There are four 120-inch fans for each tower, two upon each side. The fans are driven from a common jack shaft, which in turn is belted to a Westinghouse compound engine. The cooling towers were designed by Henry R. Worthington.

The Exhibitors' service plant in Machinery Building takes its condensing water from the Lagoon and the condensers discharge the hot water into a tunnel which runs 1100 feet under the Lagoon to the suction of the Cascade pumps, where it is cooled in passing over the Cascades and through the fountains, which thus serve a utilitarian as well as an artistic purpose. The intake for the condensers is a 36-inch vitrified pipe and the water runs through it by gravity to the four cold wells. The condensing outfits of the various exhibitors will be described later in connection with the exhibits.

The Boiler Plant.

The boiler plant of eight batteries, each consisting of two 400 horse-power Babcock & Wilcox water tube boilers, in the Steam. Fuel and Gas Building, is supplied with water from the city water mains by two Worthington horizontal duplex 9 and 16 x 71/2 x 15 inch pumps, with compound steam cylinders and pressure pattern water ends. One of these pumps is shown in Fig. 14. The steam valves are of the semirotative type, while the water valves are placed in separate removable compartments where they are easily accessible. The water plungers are packed on the outside, where the packings are visible and accessible; the glands being in the middle and facing each other. The plungers are not attached to piston rods passing through the cylinder heads, but are moved by side rods passing through to yokes on the plungers and on the steam piston rods. There is also one Worthington 14 x 10 x 18 inch feed pump, Fig. 15, of the vertical Admiralty pattern, having piston steam valves. This pump has been designed especially for service on ship board or in other locations where space is limited. All pumps in the boiler plant discharge into a common ring main, permitting them to operate singly or together as desired. At full load the boilers will require over 700,000 pounds of water per hour.

The Steam Turbines.

At the present time much interest centers in the steam turbine, which promises to reduce the weight and cost of prime movers. The large machines of this type are on exhibition in block 51, aisle 1, and block 44, aisle 10, Machinery Building, one being shown by the Westinghouse Machine Company and the other by the General Electric Company. Economic utilization of the energy of steam requires its expansion to the lowest possible pres-

condenser, supplied by Henry R. Worthington. The air is removed by a Worthington rotative dry vacuum pump of the center crank type, but similar in other respects to the horizontal pumps already described. An air cooler is interposed between the condenser and the vacuum pump, considerably increasing the capacity and efficiency of the latter. The condensed steam is removed from the condenser by a Worthington volute pump directly connected to an induction motor. The operation of this pump is very interesting, since it requires neither valves nor floats and is not subject to vapor binding, as are reciprocating pumps. The pump is placed below the level of the condenser, receiving the water by gravity, and its capacity is such that it runs ahead of the supply, so that the suction pipe is never full. The discharge

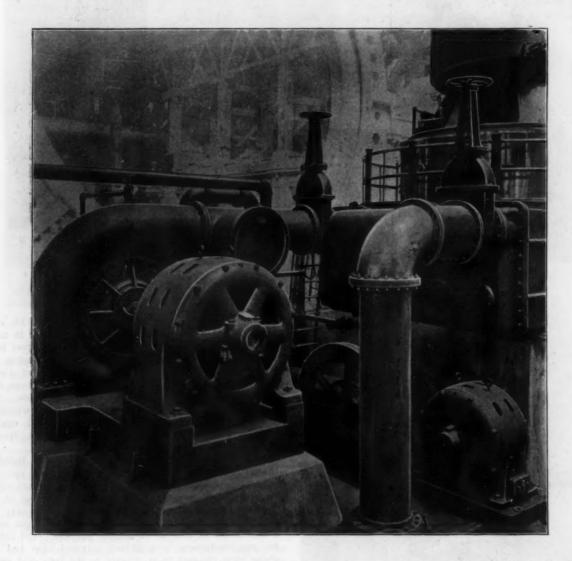


Fig. 16.—Curtis Steam Turbine in Connection with 8000 Square Foot Worthington Surface Condenser Volute Pump and Rotative Dry Vacuum Pump.

sure, which in the turbine is accomplished without the usual losses due to the corresponding extremely low temperatures. In actual service the economy of the turbine is increased by approximately 3 to 5 per cent. for each inch of vacuum higher than 26 inches. It is therefore of vital importance that all losses should be reduced to a minimum. The absence of oil from the steam renders the use of a surface condenser desirable in places where the saving of condensed steam is important. The fact that the final temperature of the condensing water must be comparatively low necessitates the highest degree of efficiency in its use and the immediate and complete removal of all noncondensible vapors, whose presence would increase the absolute pressure and consequently reduce the efficiency of the turbine.

The steam from the Westinghouse-Parsons turbines at block 51 is condensed in a 1500 square foot surface

pipe is, however, always full and pressing back against the pump, but as long as the latter is in motion there is no possibility of the water passing back to the condenser, so no automatic devices are needed. In another turbine plant a pump of this character returns the hot water directly from the surface condenser to the boiler against a pressure of 250 pounds.

The Curtis steam turbine, exhibited by the General Electric Company in block 44, is of the vertical type, and the condenser is placed in the base of the steam turbine. It contains 8000 square feet of tube surface and was built by Henry R. Worthington. The air is removed by a rotative dry vacuum pump, similar, as regards the air end, to those heretofore described, but driven through the medium of a silent chain by an electric motor. The volute circulating pump and dry vacuum pump may be seen in Fig. 16.

(To be continued.)

Steam Turbines at the Municipal Electric Plant at Jacksonville, Fla.

The rapid progress made in the rebuilding of the city of Jacksonville made necessary the consideration of extensions to the city electric plant to satisfactorily meet increasing demands for electric light and power. As the available space was limited and the cost of reciprocating engine foundations excessive, owing to the character of the soil, the merits of the steam turbine, as a prime mover, were given careful consideration. It was finally decided to place two 300 horse-power De Laval steam turbines, direct connected to two 200-kw. Bullock three-phase 2300-volt twin alternators designed for 7200 alternations per minute, and two 350 horse-power Babcock & Wilcox boilers, an Alberger Central Condensing system and other necessary accessories. It was later decided to place an additional 300 horse-power De Laval steam

The old plant will be noted in the background. The small pipes leading to end bearings of turbines supply water to water jackets. The high speed bearings are all lubricated from a central oil tank which feeds the manifold sight feed lubricator on each turbine. The steam turbine is shown between the two alternators.

Fig. 3 shows the condenser and the steam turbine pump used to supply circulating water; also the vacuum pump in the foreground. It will be noted that steam turbines are used exclusively as prime movers, excepting for the vacuum pump.

The central condensing system, which receives the exhaust steam, was designed and built by the Alberger Condenser Company, New York, and is guaranteed to be capable of condensing 15,000 pounds of steam per hour, and to maintain a vacuum of 28 inches with 30-inch barometer, and under these conditions the plant is operated on a most efficient basis. This condensing system is ar-

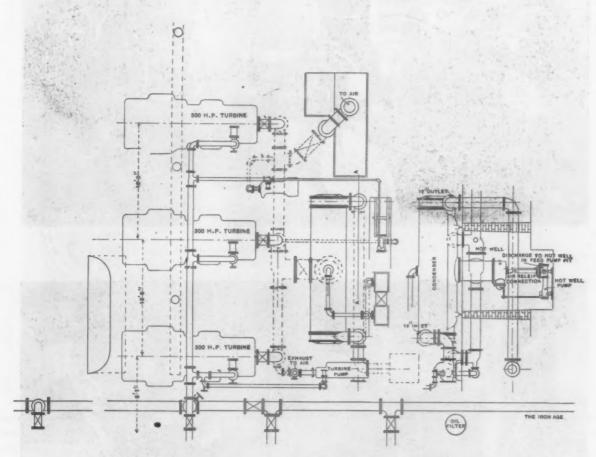


Fig. 1.—Plan Showing General Layout of Turbo-Generators and Condensing Apparatus

turbine, direct connected to a 200-kw. 500-volt direct current generator. The entire contract was assumed and executed by the D'Olier Engineering Company, Philadelphia.

The plant is located near the center of the city. Alternating current is furnished for lighting and direct current is furnished over an area of about two square miles for elevator motors and other power service. The general layout of the additional plant installed, with the exception of that portion containing the boilers, is shown in Fig. 1.

The boiler plant consists of two Babcock & Wilcox boilers, operated under natural draft, a steel stack 100 feet high and 60 inches in diameter being used. The boilers are connected to the main steam header, which also connects with the old boiler plant. A working pressure of 200 pounds is maintained and each boiler is equipped with a Babcock & Wilcox superheater, which produces steam superheated to about 100 degrees F. when boilers are operated at their rating. The turbines are operated under these steam conditions, the high pressure and superheat combined being especially applicable for steam turbine service.

Fig. 2 is a view of the turbines from the steam end.

ranged in quite a novel manner. The condenser is placed on the level of the engine room floor and is supported by brick piers that extend up from the basement floor. The exhaust piping from the turbines to the condenser is entirely below the floor. The auxiliary machinery, consisting of the circulating and vacuum pumps, is located alongside the condenser in the main engine room, and has the attention of the operating engineer. The hot well pump, which is automatically controlled by the amount of water condensed in the condenser, discharges to the feed tanks in the boiler room. The surface condenser itself is of the Alberger counter current type, in which the exhaust steam enters at the bottom, rises upward and becomes condensed by contact with the tubes containing the cooling water. The air remaining after condensation passes out at the top of the condenser to the dry vacuum pump. The circulating water entering at the top of the condenser passes downward, and its first action is to cool the air just before the latter is removed from the condenser. The water of condensation falling downward toward the hot well meets the incoming exhaust steam and is heated thereby to the same temperature as the steam. The surface condenser thus performs three funtions: First, that of a main feed water heater; second, that of condensing

the steam, and, third, that of an air cooler, all of which is done without any outside pipe connections, with tubes of the same size and length, and in the simplest manner.

The circulating pump consists of a centrifugal pump driven by a direct connected De Laval steam turbine. antees the continued efficiency of the apparatus. A larger view of the vacuum pump is shown in Fig. 4. It will be noticed that the circulating pump and the vacuum pump are placed upon skids, and they are so nicely balanced that no foundation is required to prevent vibration.

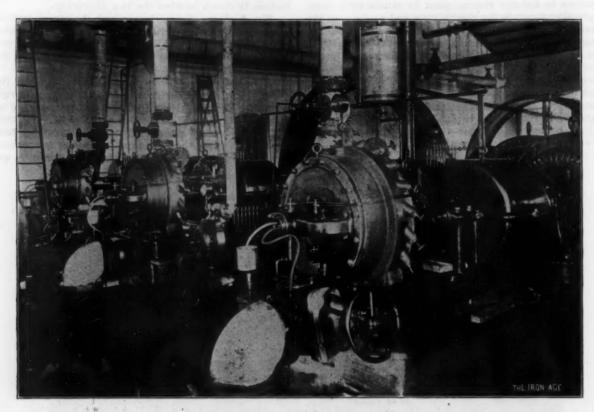


Fig. 2.—General View of the Steam Turbine Installation.



Fig. 3.—View Showing the Condensing Apparatus.

The vacuum pump is of new design. It is of the twostage type, in which the air and uncondensable vapors withdrawn from the condenser are received by the first or end vacuum cylinder, partially compressed therein and discharged into the second vacuum cylinder, where final compression to atmospheric pressure is accomplished. This compounding assures the highest vacuum and guarThe plant now completed consists of the following apparatus: Four Babcock & Wilcox boilers of 350 horse-power each and one Caldwell boiler of 350 horse-power. One Filer-Stowell Corliss cross compound engine of 750 horse-power and two Hamilton Corliss tandem compound of 350 horse-power each. Four General Electric monocyclic generators; two of 150 and 200 kw., respectively,

and two 250-kw. each. Three No. 11 Brush are dynamos with a capacity each of 125 lights of 2000 candle power. One direct current 150-kw. 500-volt generator. Two 300 horse-power 200-kw. De Laval turbine alternating current generators and one 300 horse-power 200-kw. De Laval turbine direct current generator with condensers and auxiliaries.

The plant is owned by the city of Jacksonville and is under the supervision of the Board of Trustees for the Water Works and Improvement Bonds.

The water supply for the condensing apparatus is taken from artesian wells and the discharge pipe is extended down to a sealing well just outside the building, so that as much siphon effect is utilized as possible. This water being of uniform cool temperature, the degree of vacuum maintained is quite high and the cost of producing the vacuum is reduced to a minimum.

Although the condenser and the auxiliaries are, together with the turbines, placed upon the same floor level, still the floor space occupied by the entire generating equipment is very much less than that occupied by recipthat only \$5,000,000 additional will be necessary to complete the canal from Georgian Bay to Lake Ontario. Of the sum already expended \$500,000 was the cost of the lift lock at Peterborough. The southern terminus of the canal has not yet been decided upon, although Canadian engineers are stated to advocate the Lake Ontario terminus at Trenton, Ontario, as the inland channel extending from that point to the mouth of the lake will give barges leaving Lake George a land locked passage from Lake George to the St. Lawrence River, avoiding the storms on Lake Ontario. The northern terminus of the canal is at Midland on Georgian Bay. The canal is designed for the passage of \$00-ton barges, and it will shorten the shipping distance from Lake Superior points to Liverpool 750 miles, or 1500 miles for the round trip.

The German Steel Combination.—The Ironmonger reports that the merchant associations which existed before the formation of the German Steelworks Syndicate, and which regulated the trade in beams and shapes

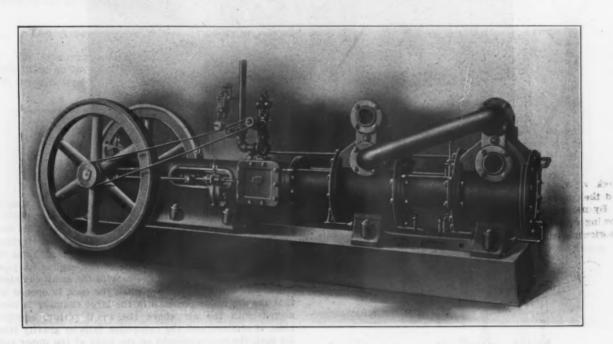


Fig. 4.—The New Alberger Vacuum Pump Used in the Municipal Electric Plant at Jacksonville, Fla.

rocating engines of about the same power located in the same engine room.

The Peterborough Sixty-five Foot Lift Lock.

The lift lock at Peterborough, Ontario, Canada, in the Trent canal or water way, that is to connect Lake George with Lake Ontario, was opened with suitable ceremonies July 9. This lock, which has been under construction since 1896, is stated to be the only one on the American continent which will lift barges containing as much as 25,000 bushels of grain from the lower level of the canal 65 feet up to the higher level, or will lower vessels in the contrary direction. The lock consists of two immense steel pontoons closed at their ends by means of gates hung on the lower edges, the gates serving also as dams for the ends of the reaches of the canal. The pontoons are guided between three massive concrete towers, and are each supported on the top of hydraulic pistons, 71/2 feet in diameter, which work in water tight steel wells, cne under each piston. In other words, instead of filling a large lock space with water until it reaches a higher level, the boat is lifted bodily out of the water by these pontoons into the level above or lowered from a higher to a lower level. These pontoons are counterbalanced in such a way that when one raises the other falls, so that when one is raised up the other is depressed, permitting an exchange of vessels, one upward and one downward at the same time. It is stated that a little over \$4,000,000 has been expended thus far on the Trent water way and

in agreement with the Beam Syndicate, have joined hands with the latter since the adhesion of the Beam Syndicate to the Steelworks Syndicate. The unions concerned are the Rhenish Westphalian Beam Merchants' Union, the South German Beam Merchants' Union, the Northwest and Central German Beam Merchants' Union, and the Beam Selling Office, Berlin. As regards Upper Silesia an agreement has been made between the Steelworks Union, on the one hand, and Ed. Lindner of Breslau, M. J. Caro & Son of Berlin and Breslau, Gassmann & Co. of Gleiwitz and C. E. Clemm of Breslau, on the other, by which the Steelworks Syndicate is bound to supply the firms named exclusively with the shapes made by Silesian works for consumption in Silesia, Posen, East and West Prussia, Pomerania and part of Brandenburg. The Steelworks Syndicate, however, has the right to sell non-Silesian beams at the same prices and conditions as Silesian material, if the demand should necessitate this. The members of the merchants' unions named bind themselves to adhere to the selling conditions of the Steelworks Syndicate and to the minimum price. The Steelworks Syndicate, therefore, controls with the help of these unions an extensive merchant organization, embracing the whole of Germany.

The Directors of the United States Realty & Construction Company, New York, have elected H. S. Black, president; Albert Flake and Robert E. Dowling, vice-presidents: Byron M. Fellows, treasurer, and R. G. Babbage, secretary and counsel.

The Dyblie Automatic Air Check Valve and Three-Way Rotary Valve.

J. A. Dyblie, chief engineer of the Joliet plant of the Illinois Steel Company, Joliet, Ill., has devised an automatic air check valve and a three-way rotary valve to be used in piping connecting blowing engines with blast furnaces. Both these valves have been installed in the Joliet plant and are illustrated below. The valves, it will be noted, are bolted directly to one another, the air

the blast of air will lift the valve disk from its seat to its full hight. Instead of immediately falling back into place, it is held suspended in the middle of the chamber by means of a small piston above the chamber which is attached to the valve stem and confined in the cover plate above the valve chamber. The cylinder in which this small piston moves is fitted with a three-way cock. This cock should be opened when the engine is started, so as to permit the air to be forced out of the small cylinder into the atmosphere when the large valve disk rises. If, however, the cock is not opened when the en-

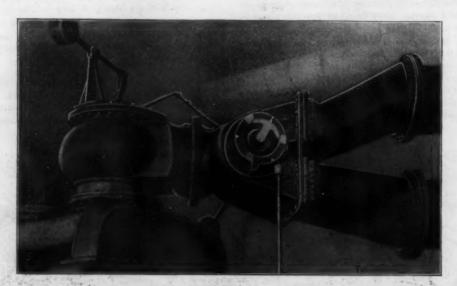


Fig. 1.—General View of the Valves in Service.

check valve being shown on the left of the engravings and the three-way rotary valve on the right.

By means of the Dyblie automatic air check valve a blowing engine can be started up instantly without the laborious work of opening a gate valve, which is the

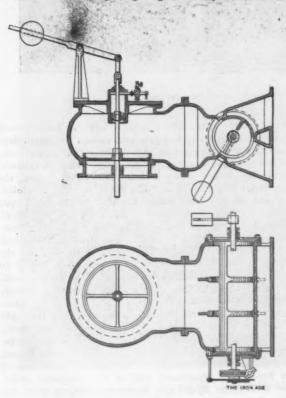


Fig. 2.—Sectional Views of the Valves.

present common practice. When the engine is shut down the valve closes, shutting off the air from the main to the engine, thereby making it impossible for gas to come into the air cylinder, something that sometimes happens with disastrous results. By consulting the upper diagram in Fig. 2 it will be seen that when the engine is started

gine starts no harm results, as the disk will simply flutter back and forth with the pulsation of the air, notifying the engineer that the cock must be opened. This can be conveniently done by the engineer when he is starting the engine, as a lever controlling this cock terminates in a handle placed near the throttle of the engine. A pipe connects the large valve chamber with the small chamber above the small piston, and when the cock is opened so that the air under pressure in the large chamber is connected with the air above the small piston, equilibrium is attained and the valve disk falls by gravity into its seat, the counterweight on the lever at the upper end of the valve stem retarding its fall and preventing the destruction of the mechanism.

This automatic valve will prevent the reversing of the blowing engine due to the air pressure after the main has been shut off. As the valve is considerably wider than the diameter of the pipe, a larger surface is presented to the column of air forced in the direction of the furnace than is presented to the valve by the back pressure of the air in the opposite direction. This tends to keep the valve in a fixed position and to insure the piping against the backward flow of gas from the blast furnace into the engine.

The right hand portion of the diagrams reproduced in Fig. 2 represents the three-way rotary valve which Mr. Dyblie has installed in connection with the air check valve. This valve is intended to be used where two or more engines are connected to two or more furnaces, and where it is desirable to have any one of the engines available for any one or more of the furnaces. It takes the place of two gate valves under such conditions. It is a matter of only a moment's time to change any engine from one furnace to the other, and this may be done while the engines are running, if desired. The valve is moved from one position to another by means of a worm wheel attached to the rod shown in the photograph, the rod having at its lower extremity, where it can be reached by the engineer, a hand wheel, by means of which it is revolved. The position of the valve at all times is indicated by a dial and pointer on the outside, as shown on the half-tone cut, Fig. 1. By referring to the illustrations it will be seen that the three-way valve is shown in a position where it closes the upper pipe, leaving a direct connection between the engine and the fur-

nace connected to the lower pipe. It will be seen that the two pipes converge into a common cylinder, and that the valve, which is a machined casting conforming approximately to the inner circumference of the cylinder, is moved backward and forth so as to open and close the desired pipes. In the Joliet installation this valve is 48 inches deep, with a radius of about 10 inches. By means of this valve a double engine may be divided so as to serve two furnaces. For instance, where two furnaces are served by three double engines each air cylinder would be connected to both blast furnaces, and three cylinders, or one and one-half engines, are used on each furnace. When the engines have to slow down for casting the engine that serves the two furnaces will, by a few turns of the worm, be changed over to the other furnace. and by a cam movement attached to the governor, or by throttling, the engine is reduced to half its speed when serving the two furnaces, so it will furnish just the same air as it did with one cylinder. This insures a uniform blast, either with one and one-half or two engines on. The blast on the furnace they are tapping will be regulated by the other engine.

The American Pressed Steel Sheave.

The American Pulley Company, Philadelphia, Pa., is exhibiting at the St. Louis Exposition samples of a new all wrought steel sheave which embedies decidedly novel

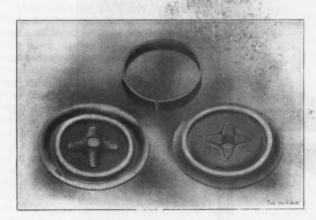


Fig. 1.—The Duplicate Halves, Showing Front and Reverse Sides, and the Locking Ring.

small steel collar having four arms, over which the main part of the sheave is embossed to prevent the hub from turning in relation to the main part of the sheave.

The hub construction employed in the larger sizes will be understood by reference to Fig. 2. The pieces marked A are locked to the pieces B by depressions in A fitting into embossed points on B. The hub C is, in turn, locked to A by lugs on A, as seen at D engaging with recesses in the hub piece C.

At present the sheave is made in but four sizes, 2, 2½, 8 and 12 inches in diameter, respectively. Dies are being made for a 3-inch sheave, and for cases to carry the small sheaves for sash pulleys. The outer grooves will be modified so as to carry a rope or chain, as desired. Sheaves will be made both of steel and of brass. It is intended also to make sheaves with roller and ball bearings. Sheaves of suitable sizes and construction are also to be

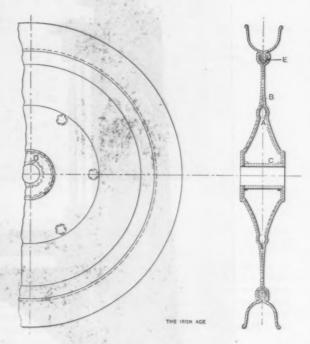


Fig. 2.—Details of Construction of the Larger Sizes of Sheaves.

THE AMERICAN PRESSED STEEL SHEAVE.

features of construction. The accompanying illustrations show the construction of the new sheave. It will be noticed that it is made entirely without rivets. Two pieces which form the symmetrical halves of the sheave are locked together under the groove which carries the rope or chain by a U-shaped broken ring, which fits within corresponding grooves in the two pieces.

In Fig. 1 the reverse sides of the duplicate halves and their locking ring are shown. The part at the left side of the engraving shows the exterior surface of one of the halves, while the part to the right shows reverse or inward side. As shown in Fig. 1, each of these halves contains a groove pressed from the inside, into which the locking ring is placed. The metal strip composing the ring is originally of a slightly conical form, and it is somewhat wider than double the depth of one of these grooves, so that when it is placed between the halves in the corresponding grooves the halves are held apart from one another the distance of about one-third the width of the metal strip composing the ring. It is the pressing together of the halves over the ring that locks them, as when this is done the ring curls up into a more pronounced U-shape, as shown at E in Fig. 2.

Several ingenious forms of hub construction are employed. The two most important forms are shown in Figs. 1 and 2, respectively. The construction shown in Fig. 1 is employed in making the small size sheaves, and the style of hub shown in Fig. 2 is used on the larger sizes. The former construction consists simply of a

made for blocks, trolleys and any service in which large numbers of the same size are required.

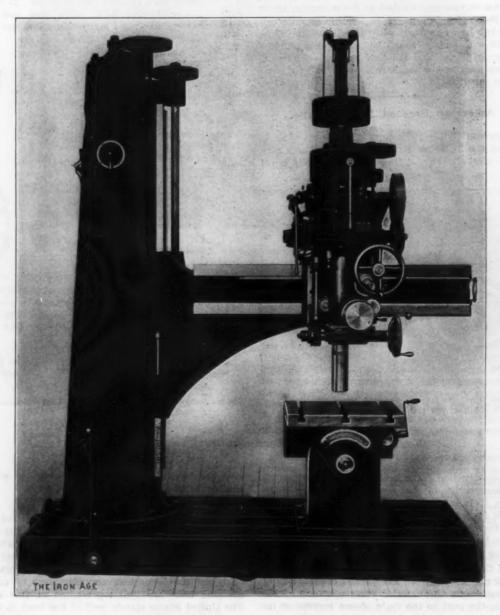
An international exhibition has been opened at Ghent, Belgium, devoted to small motors and machine tools for various industries, the object being to show where means of production may be improved with the aid of motor power, especially by the use of electric motors. It is to be hoped that American manufacturers of motors and machine tools are well represented at this exposition. The United States stands well at the head in both these lines of manufacture, and an exposition without examples of the best American ideas in electric motors and in tools direct connected or operated in units from electric motors would certainly be incomplete. The American application of compressed air in machine practice would also be exceedingly instructive to the Europeans who will attend this exposition, and would assist in bringing the European market in still closer touch with the manufacturers of this country.

The Rhodesia Herald states that the first blast furnace in South Africa has recently been erected near Pretoria, on the line of the railway. It is situated in the center of iron deposits and in close proximity to coal supplies. The furnace, which will have a weekly capacity of 500 tons of pig iron, is to be followed by rolling mills and a steel converting plant. The ores are hematite and magnetite and run 58 to 62 per cent. of metallic iron.

The Willey Electrically Driven Radial Drill.

One of the most interesting exhibits of machine tools shown in the Palace of Electricity at the St. Louis Exposition is that of James Clark, Jr., & Co., Louisville, Ky., makers of the Willey electrically driven tools. These tools are of wide variety. Their design marks a rather new departure in the application of electric motors to machine tools, as the motor is embodied in the design of the machine itself instead of being attached to the machine separately for driving it through a combination of belts, gearing or speed box, as is the more common practice. This construction of course necessitates the use of special variable speed motors, but the advantages which

motor has nine speeds, which in connection with the back gears will give 18 spindle speeds, ranging from 14 to 250 revolutions per minute in geometrical progression. The location of the driving motor on the head of the drill in this manner permits the application of the power direct to the spindle without loss. The construction is simple and compact, and a feature of importance in this construction is that all parts possibly needing attention are easily accessible for examination and adjustment. The motor is built to also operate on single voltage circuits, the speed changes being accomplished without armature resistance, and the motor running at practically constant speed for any load in any position of the controller. This feature of speed regulations on a single voltage circuit is



THE WILLEY ELECTRICALLY DRIVEN RADIAL DRILL.

accrue from the direct application and absence from view of the motor and the symmetrical appearance of the machine are held to fully demonstrate the expediency of the advanced step in machine tool design thus taken by the makers of this machine.

Conspicuous among these tools is the motor driven radial drill which is herewith illustrated. As will be noted by referring to the engraving, the driving motor is concealed from view, being located within the casting of the head of the machine. The motor frame is in fact cast into the head of the machine, so that the armature shaft is vertically geared directly to the spindle. The motor has a multipolar field iron clad armature with self-feeding carbon brushes and self oiling bearings. It is made with two commutators in order to get a wide speed regulation with high efficiency at any speed. The

a very valuable one, as it enables the tool to be used in any shop having either single or multiple voltage systems of distribution.

The back gears are of the friction type and can be thrown in or out while the machine is in operation. The spindle has quick return; a depth gauge which can be set to automatically trip at any desired point; automatic stop, and eight positive feeds ranging from 0.0006 to 0.62 inch per revolution in geometrical progression. The spindle is a crucible steel forging ground to size and fitted with a friction geared tapping attachment which is positive and can be engaged while the spindle is in motion.

All the operating levers are located on the head within easy reach of the operator. The arm is of most rigid construction, strongly gibbed to the column, and it is raised and lowered by a plain series wound motor in the top of the column. This motor is directly geared to the hoisting screw and is controlled by a small handle on one side of the column.

The column swings on a central stump with ball bearings at the top, to take the weight, and roller bearings at the bottom. By means of an adjusting screw the column can be raised to just clear the base, the weight of the column and arm being thrown on the ball bearing, in which position it swings very freely. A clamping lever is arranged to transfer the weight from this bearing to the base of the machine and to clamp the outer column to the bed at the outer edge of the column base.

There are only two joints in the drill between the base and head when clamped in position for work, and at both of these joints the parts in contact have very large bearings, insuring the utmost rigidity for heavy work. The machine is regularly equipped with a compound table with tangent screw. At present this machine is built in three sizes.

The Rust Water Tube Boiler.

The Rust boiler, described in our last week's issue, is manufactured by the Rust Boiler Company, 605 German National Bank Building, Pittsburgh, Pa. The article should have stated this fact, the omission of which was an oversight.

As an unintentionally misleading statement was made at the beginning of the article referred to, it seems desirable to bring out some points relative to the boiler a little more clearly. The patent tube sheet, used in the construction of the drums, is the most novel and characteristic feature of the boiler. It is by means of this tube sheet that the manufacturers are enabled to use what they believe to be the best construction for water tube boilers—namely, cylindrical drums without flat surfaces or bent tubes. The tube sheet is formed by heating the flat plate to the proper temperature, then pressing in a hydraulic press fitted with dies specially constructed for that purpose, the pressing being done at one operation. An important feature of these tube sheets is that between each pressed up portion and the adjacent ones there remain undisturbed cylindrical portions or belts of the original surface of the drum. This construction provides a drum in which bent tubes or stayed surfaces are not necessary and which at the same time is in every way as strong and reliable as those in which it is necessary for the tubes to enter radially.

The Shelby Iron Company.

President T. G. Bush, Birmingham, Ala., has submitted to the stockholders of the Shelby Iron Company a report of the operation of the company for the fiscal year ending March 31, 1904, from which the following condensed balance sheet is taken:

Assets.

Cash at Shelby and with treasurer	
Bills and accounts receivable	82.242.52
Pig iron on yard at Shelby, 14,594 tons	189,730.06
Merchandise in commissaries at Shelby, Fenwood	
and Kalona	16,698.61
Materials on hand	55.424.65
Furnaces and equipment	464,965.59
Furniture in offices at Shelby and Birmingham	1.165.00
Furniture in hotel	1.913.43
Store, warehouse and dwellings	71 502 40

Store, warehouse and dwellings	71.503.49
Lands-cleared, timber and ore	359,042.68
Timber rights	7,949.87
Eumawhee Mining Company's stock	16,000,00
Total	1,301,129.25
Liabilities.	
Accounts payable	\$16,891.31
Pay rolls payable, check issue account and hospital	
account	9,317.97
Capital stock	1,000,000.00
Profit and loss	226 561 26

pany's custom, 25 cents per ton of iron made during the

Stumpage, wood used from lands and timber rights

year was charged into the cost of iron for extraordinary or prospective repairs. This account showed at the close of the year a credit of \$11,287.31. The repairs now being made to furnace No. 2, in the way of relining and other improvements, will be charged against this account. The iron statement is as follows:

Tons. Lbs. On hand at Shelby, April 1, 1903 6102038 Made during the year 1903-0436,146-2010
Shipped from yards during the year22,097—1120
Used at foundry
Balance on hand March 31, 190414,594-1389

Of the iron on hand 5145 tons were applicable to sales already made; but the purchasers of this iron, owing to the dullness of the iron market which prevailed for several months before the close of the fiscal year, have been slow in taking it.

The profit and loss account is as follows:

1903.	Credit.	
April 1. 1904.	By balance	\$210,413.74
March 31.	By gain on pig iron for year \$1	54,383.47
	By profit on Shelby commissary	8,812.23
	By profit on British commissary	1,283.39
	By profit on Kalona commissary	1,687.75
	By rents received, less repairs	3,105.21
	By interest	2,605.70
		71.877.75
	Less	
	To legal expense\$572.95	
	To land expense 962.15	1,535.10
	Net gain in operation for year.\$	170,342.65
	To depreciations and other	
	charges	4,510.12 \$165,832.52
		\$376,246.26
	To two dividends paid during	the year
	(declared \$150,000)	149,685.00
March 31.	By balance	\$226,561.26

The improvements for the year consisted chiefly in extending some railroad tracks, the purchase of a broad gauge locomotive, the construction of some charcoal ovens at Childersburg, Ala., improvements to water works, and some improvements to ore washers. The total improvements for the past 13 years have been \$190,050.72; depreciation charged for same period, \$57,188.10.

Furnace No. 1 was repaired and blown in April 28, 1903. From that date to January, 1904, both furnaces were in continuous operation. In the early part of January No. 2 furnace was blown out, both on account of repairs and the accumulation of iron. Furnace No. 2 is now being relined and otherwise thoroughly overhauled, to be in readiness when the market will justify the operation of both furnaces, or in case of an accident to No. 1.

During the year just closed one dividend of 5 per cent. was paid out of the earnings for the year—in November, 1903. While the earnings for the year were about 16 per cent. on the capital stock, the directors decided that it would not be advisable to declare a further dividend until there should be an active market and the stock of iron materially reduced.

The bimonthly wage conference between officials of the Amalgamated Association and the Republic Iron & Steel Company began in the Frick Building, Pittsburgh, on Wednesday. It is probable that puddling and finishing rates for July and August will be reduced on account of the low prices at which bar iron is selling. Puddling for May and June was \$5.25 a ton, based on a 1.3-cent rate for bar iron, but as iron bars have been selling at mill below that price for a month or more there is likely to be a reduction in the puddling and finishing rates.

The contract for building the largest car ferry on Lake Michigan has been let by the Grand Trunk to the Craig Shipbuilding Company, Toledo, Ohio. The boat is to be completed in 1905 and will cost \$400,000. It will be 300 feet long, 56 foot beam, and will run 18 miles an hour. It will carry 40 cars. The ferry will operate between Grand Haven and Milwaukee.

23,880,40

The Wilcox Track System.

The Wilcox Mfg. Company, Aurora, Ill., has recently perfected and had patented a new system of tracks for its overhead carrying systems. As will be seen by the right hand illustration in Fig. 1, where the section of the track is illustrated by shading, this track consists of a light plate of steel, bent into a square form, open at the bottom, with ears or flanges extending below. At intervals, depending upon the weight to be carried, the track is supported by means of heavy straps bolted to

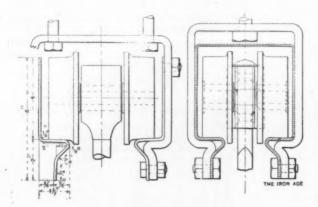


Fig. 1.—Cross Sections, Showing the Construction of the Track.

the track at the bottom of the flange. This gives a wide horizontal tread for the face of the wheel and prevents springing of the load, as the strength is greatest where the strain is greatest. This track is also made open at the top and bolted to the supporting braces near their top, as shown in the left hand illustration in Fig. 1. The manufacturer claims for this new design of track an unyielding surface, a tread that makes it practically impossible for the wheels to climb and one that is practically self cleaning. It is made in various sizes and gauges in proportion to work to be done. For a maximum load of 5000 pounds the braces are put at about 21/2 feet centers, and in such case the material of the track

work of raising the dipped article out of the tank is lightened by means of the counterbalance weight. The construction employing the triplex chain hoist is, however, recommended by the manufacturers for such plants as do not have an ample supply of air under pressure, as this form of hoist is suited to the handling of varying loads, while a counterbalance hoist is only applicable to plants where the load does not vary to any great extent.

As will be seen by the illustration, the carrying track is suspended from the ceiling and a section immediately above the tank is supported by two steel cables, one at either end, which are brought together and attached to the chain of the hoist and which must, in the nature of the case, move backward and forth at exactly the same speed, insuring a horizontal position of the depressed section of the track at all times. The removable section of track and beam to which track is attached may be from 5 to 10 feet long. It will be seen that when this track is brought back into position with its load steel catches bolted to the beam above the track prevent its rising above its proper level. In the construction embodying the counterweight the operator, by pulling a hand chain, can raise, lower or hold any load on the removable section of track, and this load is held at any hight and cannot run down.

The articles to be dipped are either placed in a basket suspended from a trolley or may be attached to S-hooks different lengths hung from swivel I-plates and fastened to roller bearing hangers or carriers. In the latter case these carriers are pushed along to the depressible section of track, and when a sufficient number has accumulated the section is lowered by means of the device just described and the articles immersed in the paint. The depressed section of the track with its load of dipped articles is then restored to position by means of the pneumatic or chain hoist and the carriers are moved along several feet in advance, where the articles are allowed to drain into a trough provided for that purpose, and by the time the next load of casting or articles is ready to dip the first load will have drained sufficiently to permit transferring to the drying department, where the parts may be permitted to dry while still on the hangers, as the decorators find it more convenient

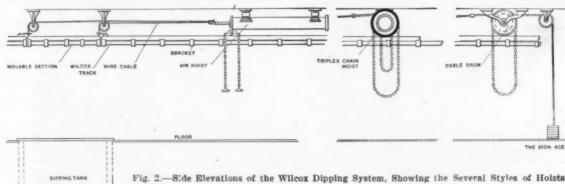


Fig. 2 .- Side Elevations of the Wilcox Dipping System, Showing the Several Styles of Hoists.

is made from %-inch flange steel. The new construction permits the use of very wide bearings in the journals of the wheels, which are of particular advantage where roller bearings are used, as they are in this construction. The new track was devised by Wm. H. Spiller, mechanical engineer for the Wilcox Mfg. Company.

characterans seeds

The track has recently been employed in connection with a new system for dip painting agricultural implements and other articles of the kind, which is interesting and is calculated to save both time and labor. novelty of the system lies in the fact that the section of the trolley track and beam which supports it, immediately above the tank, can be depressed as low as necessary and raised again into position practically auto-This may be accomplished either by means matically. of an air hoist horizontally placed above the track and connected with the two ends of the depressible section by means of wire rope, or by a geared chain hoist in place of the air hoist. These methods are shown in Fig. 2, which also shows a form of chain hoist in which the

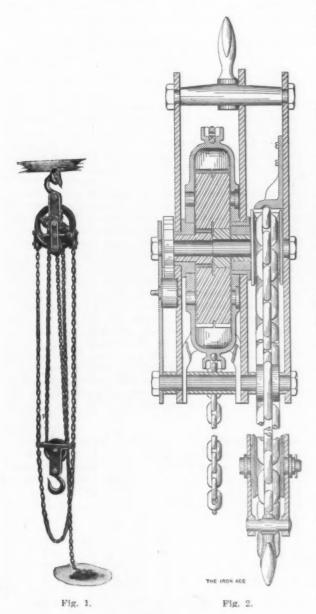
to handle articles to be striped while suspended from such a carrier than they do when they lie on a platform or floor.

The Executive Board of the recently organized National Association of Engine and Boat Manufacturers met last week at the Hotel Manhattan, New York, and elected officers for the organization. The officers elected were as follows: President, John J. Amory, Gas Engine & Power Company; first vice-president, H. A. Lozier, Lozier Motor Company; second vice-president, J. M. Schoonmaker, Charles A. Strellinger Company; third vice-president, H. R. Sutphen, Electric Launch Company; treasurer, J. S. Bunting, Smith-Mabley Company; secretary, J. Gambel.

The general and executive officers of the National Wire Corporation, New Haven, Conn., will be removed August 1 to the Engineering Building, 114-116 Liberty street, New York.

The Acme Chain Hoist.

A new departure in chain hoists has recently been put on the market by the Franklin Moore Company, Winsted, Conn., and is now being exhibited at the St. Louis World's Fair. The general appearance of the complete hoist is shown in Fig. 1, while Fig. 2 shows the construction of its novel feature, whereby a quick raising and lowering of the load hook is accomplished without a tedious manipulation of the hand chain. The



THE ACME CHAIN HOIST.

load chain, one end of which is secured at the lower end of the upper block, passes around a pulley on the hook hanger and over a wheel in the upper block. The free end hangs as shown. This part of the device resembles an ordinary single rope tackle. The upper wheel is driven by gearing from the hand chain wheel in the customary manner to get increased power, but is arranged to be disengaged by the throwing out of a pawl from the ratchet attached to it. A slight downward pull on the free end of the load chain releases the pawl, and the load hook, if pulled, may be lowered quickly to the load which it is desired to raise. appreciable pause in the movement allows the pawl to reengage the ratchet, much after the manner of the action After the hook is attached of a spring shade roller. to the load the slack chain may be taken up quickly by overhauling the hanging end of the load chain.

The raising or lowering of light loads not exceeding 400 pounds may be done entirely by the load chain, and at the same time the load is safely sustained at any point. The parts are constructed of the lightest material and of the smallest size consistent with the work to be performed, so that a block of 1000 pounds capacity may be easily put up or taken down by one man. The hoist, at present, is made in six sizes, with capacities from ½ to 4 tons, but larger sizes are to be built eventually. The smallest weighs 30 pounds and will hoist its rated full load with a force of 32 pounds exerted on the hand chain. The largest block weighs 150 pounds and is operated under rated full load with a pull of 119 pounds. The gears which form one of the most important features of the block are cut from drop forged blanks of open hearth steel.

The Lake Superior Corporation.

The newly elected president, C. D. Warren, of the Lake Superior Corporation, together with the directors of that company, recently made a tour of inspection of the works at the Soo. The Lake Superior Corporation is successor to the Lake Superior Consolidated Company, which was a merger of the various Clergue interests at Sault Ste. Marie. Mr. Warren on his return to Toronto expressed himself as highly gratified with the condition of affairs as he found them. The steel plant and the rail mill were referred to as being in particularly good condition, and the directors decided as a result of their investigation to place these among the main industries of the new corporation. They hope to have both plants working and ready for inspection early in August. president and directors of the corporation during their visit concluded contracts which will keep the Helen mine running with an output of from 800 to 1000 tons a day throughout the season, in addition to such shipments as are made to the steel works of the parent company. Algoma Central Railway, another property of the Superior corporation, was reported by Mr. Warren to have been built as well as the highest standard of American railroads. Similar report was made of the railroad running from Michipicoton Harbor to the Helen Mine. Mc. Warren further stated that the water power canal and power house on the Canadian side of the Soo are in excellent condition and will be the means of encouraging many industries to locate there. The corporation also owns street railway lines, wood pulp mills, saw mills, machine shop and foundry, chemical plant and nickel

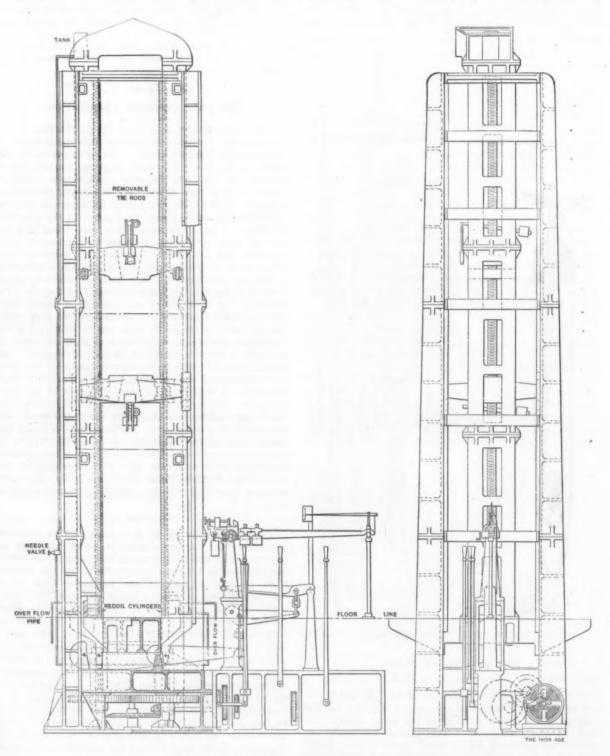
Co-operative Work by Salesmen.—Every salesman in each of the various companies which comprise the United States Steel Corporation is instructed to search out business in all lines manufactured by the corporation. He will sell only his own particular lines, but he will be expected to keep a sharp eye open for "tips," which will be turned over to those salesmen in whose special province the business lies. For example, the salesman of the Carnegie Steel Company who sees a chance to sell a certain wire specialty will make an immediate report of the fact, and the report will be turned over to the American Steel & Wire Company's salesman having that specialty in that territory. It does not matter whether the new business be steel rails, wire, structural steel, wire nails, merchant steel or other product, so long as the United States Steel Corporation manufactures it. In this way each constituent company has hundreds of new men looking for business, which must naturally greatly increase the efficiency of the sales departments. The salesmen get very little additional work thereby. Each is helped more than he helps, they themselves say. The rule has been in practice long enough to establish its wisdom.

The Northern Motor Driving the Gisholt Boring Mill.—On July 7, 1904, there was published in *The Iron Age* a description of the boring mill manufactured by the Gisholt Machine Company of Madison, Wis. We failed to mention in this connection that the machine is driven by the Northern variable open motor built by the Miller Electrical Mfg. Company of Madison, Wis.

A Riehle 600,000-Pound Testing Machine for the University of Illinois.

An engineering experiment station has been established by the State of Illinois at the State University at Champaign for the purpose of carrying on engineering investigations along lines somewhat similar to those followed by the various State agricultural experiment

Riehlé United States standard vertical screw power testing machine, with an added new feature in the form of four columns to guide the pulling head, these columns being firmly secured to the base of the machine, and entirely independent of the weighing mechanism. The machine has two heads, the upper head being supported by cast iron columns, which rest on and are bolted to the weighing table. A tie piece at the extreme top of



SECTIONAL ELEVATIONS OF THE RIEHLE VERTICAL SCREW POWER TESTING MACHINE WITH DIAL SCREW BEAM.

stations. This station has recently ordered from Riehlé Brothers Testing Machine Company of Philadelphia a 600,000-pound testing machine of the vertical screw type, a brief outline of the general construction and operation of which is here given. This testing machine is intended for general testing purposes and is made to take columns, long testing pieces, beams and large irregular shapes of reinforced concrete, stone or brick construction, built up metal trusses or test pieces in great variety.

In general design this machine is similar to the

these columns holds them together at this end. The lower or "pulling" head is driven by two main screws and moves up or down on the screws when they are turned. The top head can be secured at different elevations according to length of specimen to be tested, and is held in place by two keys which pass through slots in the cast iron columns. The parts which transmit the stress from the specimen to the weighing levers rest on the weighing table and are not connected in any way to the parts of the machine which supply the power. The

weighing table is supported on eight hardened steel knife edges in the main levers, and they in turn rest on the steels which are fitted in cast iron bearings on the cover plate. The cover plate is supported by two legs on a steel bed plate, which, in turn, rests upon a concrete foundation.

The main levers of the weighing mechanism are of steel and are specially designed to secure an even distribution of load over the knife edges. Under the table the levers branch in a V form to spread the points of support as widely as possible. From the main levers the force operating the beam is transmitted through two intermediate levers.

The beam of the machine is the Riehlé dial screw beam graduated in 10,000-pound marks and reading to 100 pounds. The poises, of which there are two, are driven by a coarse pitch screw, and the nut takes up wear automatically. One poise can be run out at a time. When it reaches the end of the beam it will release itself and the second poise may be thrown in, or, if desired, both poises can be run out together and the reading on the beam doubled. A needle beam with pointer swinging over a graduated dial is used to magnify the swing of the weighing beam, thus increasing the sensitiveness of the machine.

The pulling head through which stress is applied to the specimen has four projecting arms carrying at their ends flat bearing surfaces. These run against the faces of four guide columns, which are firmly fastened to the bed plate, legs and cover plate, and extend to the highest point reached by the pulling head in its travel. guide columns are securely tied together at suitable intervals, and take care of any side thrust coming on the pulling head, such, for example, as occurs when long specimens are compressed. The screws are driven by a train of gears and are made of a special grade of steel and have long guides in the cover plate and on the bed All gears are spur gears, except one pair of bevels, and all gears are cut. By means of friction clutches and positive clutches the pulling head can be driven either up or down at the speeds noted later on. The levers controlling the various pulling speeds are provided with an interlocking mechanism which makes it impossible to throw in any two interfering sets of gears at once.

The machine is driven by a 15 horse-power, two-phase, 220-volt induction motor, capable of pulling the machine up to full load at speeds not greate than 1 inch per minute, and up to half load at 2 inches per minute. It is geared to the machine through one direct and one reversing train of gears, and the starting, stopping and reversing are accomplished by a double friction clutch. In place of this gear drive, the motor could have been connected through a silent chain, in which case the motor is reversed in order to move the head up or down. The machine could also be adapted for belt drive, the speed of the driving shaft being 300 revolutions per minute.

Compression specimens are crushed between two cast iron "tools" with hardened steel plates placed on their faces. These tools could be made with spherical seats if desired. Three transverse tools are provided, one on the pulling head and two on the table. The two on the table have cylindrical bases on which they can rock freely. The table has 16 2-inch tapped holes conveniently placed for inserting bolts to hold specimens or tools. Wedge shaped openings are made in both the weighing and pulling heads on which hardened steel wedges or "grips" slide. These grips are hung on counterbalanced levers with handles by means of which they can be made to "take hold" of tensile specimens, and as stress is applied the holding power increases. The surface of all grips is roughened by cross cuts. Several sets of grips and several sizes of liners are supplied, so that any specimen within the range of sizes given later can be effectively held. The weighing head can be placed in any one of three positions, as may be required by the length of tensile specimen. In each of these positions it is held by two keys passing through slots in the cast iron columns. The weighing head is moved from one position to another by moving the pulling head till the former is lifted so as to loosen its keys; then, the keys

being removed, the pulling head and weighing head together are moved to the desired position; the keys are inserted and pulling head moved down.

In place of the rubber buffer used on smaller sizes of machines, the blow on the knife edges due to recoil when the specimen breaks is minimized by causing the energy of recoil to be partially dissipated in forcing water through a very small aperture. The cut shows the general arrangement of hydraulic cylinders, piping and needle valve used. The machine and motor are to be placed on a heavy concrete foundation. The following are the principal dimensions:

Extreme hight	aches.
Extreme length, including motor	feet.
Extreme width	nches.
Hight above floor	aches.
Weight100,000 pc	ounds.

The machine will take compression specimens 25 feet long and less; tensile specimens 22 feet long, with 20 per cent. elongation in 20 feet and more for shorter lengths; transverse specimens 10 feet long by 3 feet wide and less; tensile tools—viz., grips and liners—to take specimens 6 inches round or square and less to ¾ inch round or square; 12-inch by 4-inch flats and less; compression tools 20 inches square and hardened steel plates 6 inches square, and transverse tools, 3 feet wide by 18 inches high. The speeds of machine at 300 revolutions per minute of the driving shaft are as follows:

	1	 hes per inute.
Speed for setting head		 8
Quick speed for testing		 2
Fast speed for testing		 1
Medium speed for testing		 0.4
Slow speed for testing		 0.1
Slow speed for crushing test		 0.05

Fifteen horse-power will be required to operate this machine, using as a maximum speed 1 inch per minute to full capacity of machine, and 2 inches per minute to one-half the capacity of machine.

The New England Foundrymen's Association.-The New England Foundrymen's Association held its July meeting July 13, at the Point Shirley Club, Winthrop, About seventy of the members and their guests attended the meeting, which was the annual July outing. At 1.30 p.m. a dinner much out of the ordinary "shore dinner" class was served, after which the guests enjoyed the privileges of the club for as long as they cared to A short business meeting was held at the close remain. of the dinner, with President B. M. Shaw in the chair, and Fred F. Stockwell secretary. The death of A. J. Miller, Whitehead Bros., Providence, R. I., a member of the association, was announced and the following committee appointed to attend the funeral: Henry A. Carpenter, Providence; H. O. Henshaw, Boston; Theodore It was voted to hold the August Colvin, Providence. meeting at Providence, and to leave all arrangements for this meeting, which will also take the form of an outing, in the hands of the Providence members of the associa-

At Pittsburgh this week the courts handed down an opinion in favor of Frank Donner in his suit against his brother, William H. Donner. The plaintiff gave his brother \$25,000 to invest when William H. Donner started the Union Steel Company and claimed that he was entitled to a pro rata share of the profits that ensued from the promotion and sale of that company. The defendant held that the money was only used as an instrument, and not for the purchase of stock. The court found that Frank Donner bought \$25,000 worth of stock in William H. Donner's interest in the company, and is entitled to four-fifty-fifths of that interest. William H. Donner held a one-fourth interest, and the entire profits on the sale were \$7,300,000. William H. Donner is declared to be a trustee for his brother, and liable for an accounting.

Under the auspices of the Mutual Boiler Insurance Company of Boston, R. S. Hale has published an admirable pamphlet on "Smoke Prevention."

The Iron Age

New York, Thursday, July 21, 1904.

DAVID WILLIAMS COMPANY	,		00	-					PUBLISHERS.
CHARLES KIRCHHOFF,			-	~		-	-	•	EDITOR.
GEO. W. COPE, -			-	-	-				ASSOCIATE EDITOR.
RICHARD R. WILLIAMS,		-	-						HARBWARE EDITOR.

Exporting Raw Materials.

Rasping comment has appeared in the daily press on the exportation to Europe of Lake Champlain iron ore. It is assumed that shipments abroad of this bulky raw material are "significant of the abnormal condition of the iron and steel industry in this country." We export such raw material, while many of our iron and steel works are idle, "instead of converting it by our own labor and skill into much more valuable forms for the foreign markets." This is "simply because the industry here has been 'jacked up' to an artificial level of high cost and high prices, that incapacitates it for healthy competition." While we cannot but admit that, as compared with economic conditions in some other countries, an artificial level of cost and prices does prevail here, it does not necessarily follow that all exportations of raw materials are due to this fact. If this were the case, our exportations of cotton, instead of muslins and calicoes, could be charged to the same cause as long as an idle cotton mill could be found within the confines of the United States. But this country is a large producer of many of the staples desired by manufacturers of other countries, and whenever conditions are favorable for the purchase of raw materials here our producers get an opportunity to participate in supplying such wants. It happens that iron ore running high in phosphorus is needed badly by some of the basic Bessemer steel works in Europe. Certain Lake Champlain ores suit their requirements admirably. Ordinarily, however, freight charges are too high to enable the Lake Champlain ore operators to reach such a distant market. Ocean freights are now down to a level which permits the movement. The case is thus very simple, when understood. It is by no means one of the "terrible examples" of our abnormal condition.

Dismissing this aspect of the question, we are tempted to go somewhat afield in the consideration of the peculiar view taken of the exportation of raw materials. As stated above, the point is made that instead of exporting iron ore, it should be converted "by our own labor and skill into much more valuable forms for the foreign markets." To an unsophisticated mind, it would appear to be entirely proper to sell anything we produce, if a foreign buyer is willing to pay for it, no matter in how raw or how highly finished condition it may be. It is then merely so much taken from our abundant sources of supply, and the price received is just so much added to our individual and national income. If such a view is wrong, and no raw materials should be exported, where will the line be drawn? Pig iron is by no means far advanced as a manufactured product. In fact, it is essentially raw material to a host of industries. Therefore, it is too crude a product to be the subject of an export trade, and should always be converted into some more finished form, requiring the use of more of "our own labor and skill." But if a step further be taken, and the pig iron be converted into bar iron or bar steel, is such a product much beyond what many consider raw material? The form then assumed by the iron is one which simply makes it suitable for fabrication by workmen in another host of

industries, to whom it is the rawest of raw materials. Surely, such raw material should receive still further attention from "our own labor and skill," instead of being exported in its still very crude and incomplete state. Following the matter to its logical conclusion, to satisfy such carping critics our iron and steel exports should take in nothing short of machinery or such products of "our own labor and skill" as are suitable for immediate use by individuals. But if that state of affairs should ever be reached, would not the same critics berate our manufacturers for not endeavoring to build up a foreign demand for ordinary iron and steel products?

The Courts and Union Labor Contracts.

Another important judicial decision attacking the legality of contracts limiting employment to members of trade unions has just been promulgated. Judge Ludwig, in a local court at Milwaukee on July 13, rendered the decision in a suit brought by the Milwaukee Custom Tailors' Union against a firm which had made an agreement with the dealers to employ none but union workmen. A temporary injunction had been obtained in favor of the union, which Judge Ludwig rules was improperly issued. After the injunction had been issued, the union instituted proceedings to have the firm punished for contempt for the alleged failure to comply with the terms of the injunction. Not only was the injunction set aside, thus denying the motion to punish, but the decision went further. holding that contracts requiring the employment of none but union labor are void. The judge asserts that this is not only class discrimination but such agreements strike at the right of contract both on the part of the laborer and the employer. He says: "The agreements in question would tend to create a monopoly in favor of the members of the different unions to the exclusion of workmen not members of such unions and are in this respect unlawful. Contracts tending to create a monopoly are void." This case will probably be appealed to the Wisconsin Supreme Court. It would appear likely that the decision will be sustained, as it is in line with the position now taken by other courts on a question of this character. Quite recently Judge Adams of the Illinois Appellate Court rendered a decision of similar import. Judge Ludwig uses language in his decision almost identical with that of Judge Adams.

In this connection it is interesting to note that the attempt by American trades unions to force the closed shop in almost every branch in which labor is organized is radically different from the methods followed by trade unions in England. This question of the closed shop was long since quite thoroughly thrashed out in that country, in which the union movement is much older and has therefore passed through long periods of trials and severe tests. The English organizations are undoubtedly much more complete and are therefore stronger than most of the unions in this country. They now rely upon the control of the greater part of the labor in the different industries and the practical demonstration of the eventful advantage of unions to workmen rather than upon efforts to force all workmen to unite with them. They believe that it is better to depend upon moral suasion in bringing nonunionists to their way of thinking. Monthly Review of the National Civic Federation answers are given by the secretaries of a number of the principal labor organizations of England to requests for information relative to the position taken by such unions upon the question of the open or closed shop. These answers invariably show conservatism on the part of the English unions. One answer is particularly noteworthy.

The officer of the Associated Iron and Steel Workers who replies for that organization says that the policy of the open shop has existed in their branch of trade for 30 years. The effect, however, of the method thus pursued has been to strengthen the union. At some works practically all the men now belong to the union, while at others a part of them belong, in varying proportions. The nonunion men are ignored, having no voice in settling the terms of employment, but are expected to abide by them. It is stated that where they do not the employers unusually dispense with their services, preferring to deal with the organization and have the agreements apply to all their workmen.

The English trade unionists state that the restrictive methods now being pursued by unions in this country are similar to those employed in England 25 to 50 years ago. It would seem that the costly struggle through which the American unions are now passing is one which would have been avoided if the proper lesson had been gathered from the experience of their foreign brethren. The American union leaders have been of the opinion that they could force the absolute domination of their organizations on the various industries and thus speedily bring about the millennium of organized labor which has been the dream of all those who have risen to such leadership. Their unreasonable efforts in this direction have, however, simply led to the counter organization of employers' associations, now assuming such formidable proportions. It would have been far better for the unions to have been liberal regarding the open shop, trusting to influencing nonunion men by educational methods. The union propaganda has lost prestige in the efforts which have been made to force the issue. The open shop is henceforth more likely to prevail in industrial operations generally than the closed shop which the union leaders have been so anxious to bring about. They have only themselves to blame for getting the question into such shape that the courts are now giving it attention.

A gentleman connected with one of the great Eastern shipping houses and located at Shanghai, which is a leading Oriental distributing center, asserts that some American manufacturers and exporters are keeping up their unloading of out of date goods on the Eastern market, especially in metal specialties. The day is gone by, it is conceded, for such flagrant instances as the disposal in Shanghai of a large lot of high wheel bicycles several years after they went out of use in Europe and America, but too often, this informant states, antiquated American goods are shipped to the East to the advantage of shrewd European competitors, who are quick to avail themselves of the opportunity to put modern goods in comparison with them. The evil is not glaring, but it is one that should never exist in a new and rapidly growing market. It is easy to arouse distrust in the mind of the native of the Eastern countries. Once this germ is planted there, it is hard to remove its effects. A mercantile prejudice is about the hardest of all to eradicate. It always was difficult to deceive the Oriental mind with inferior fabrics, and they are soon aware of inferiority in foodstuffs. But the metal products of modern times, especially the great list of specialties, are generally new to them, and they can be fooled some of the time. But it does not pay to fool them. In developing a new trade the best of everything is none too good in establishing a reputation for high grade products and square dealing.

The latest report of the Insurance Engineering Experiment Station of Boston, of which Edward Atkinson is director, covers the "Protection of Theatres."

CORRESPONDENCE.

The Value of a Trade-Mark.

To the Editor: Your correspondents, Howson & Howson, make a rather remarkable contribution under date of June 30 in criticism of your editorial on "The Value of a Trade-Mark," June 16. It is remarkable because its authors seem to prefer to discuss a subject different from that of your editorial. They complain that your editorial is misleading to the uninitiated and needs an explanation, which they proceed to make. They do not say whom they mean by the uninitiated. But I beg to say to you that I believe your editorial is entirely clear to the comprehension of your readers and the public, and that your correspondents' so-called explanation is misleading and confusing to the same persons.

Your editorial discusses a recent decision of the Supreme Court of the United States. The first three sentences are as follows:

The United States trade-mark is no longer a protection to trade within the country. Registration at Washington is of no value whatever in protecting a trade-mark excepting as it is used in foreign commerce. A recent decision of the United States Supreme Court interpreting the existing statute, finds that "obviously the act is strictly limited to lawful commerce with foreign nations and with Indian tribes."

These three sentences taken together, or separately, designate in unmistakable language a United States trade-mark, procured by registration at Washington, under a United States statute, which the United States Supreme Court has recently interpreted. "the United States trade-mark" have just as clear and distinct a meaning to the merchants and manufacturers of this country, and especially to the readers of your journal, as the words "United States Patent" or "United States Courts." They at once suggest to the mind a certificate issued by the Government at Washington, somewhat similar to that of a United States patent, granting certain privileges for a term of years. There is not the slightest possibility of a misunderstanding on the part of your readers. But your correspondents say: very first sentence of your editorial is misleading where it says, 'The United States trade-mark is no longer a protection to trade within the country." And then they add: "A trade-mark in the United States is just as much of a protection of trade within the country as it ever They devote considerable space to a statement of the protection of a trade-mark at common law, but omit to mention that your editorial says in the same connection, "Where specific laws do not exist, protection of trade-marks may be had under the common law."

This is neither a fair quotation nor a just criticism of your language. It is just as if you had said "The United States courts afford no protection in some cases," and they had replied, "The courts of the United States afford protection in all cases," and then had proceeded to explain that the State courts afford protection where the United States courts do not. They appear to quote your language, but they do not. They appear to contradict what you say, but they do not. You are discussing the protection afforded by the United States trade-mark statute. They appear to answer you by discussing the common law protection.

Here is their second comment: "Again, it is misleading to say, as your editorial does, that 'A national trade-mark is worthless, excepting as it protects its owner in his trade with foreign countries." They add: 'A trade-mark used anywhere throughout the United States, and national in that sense, is as valuable as it ever was." In this case your correspondents explain how a trade-mark may be called national in a different sense from that in which you use it, and then purport to contradict your statement by giving to the word "national" a different meaning. They are again referring to a common law trade-mark and your editorial is discussing a national trade-mark, which your readers will, of course, recognize as a trade-mark issued by the National Government.

I will mention their next criticism only to say that they omit from the sentence they quote the part of it which, with the rest of your article, connects it unmistakably with the United States trade-mark statute, and then again make a statement which relates only to common law trade-marks. They conclude: "It will be obvious that, except for special circumstances, registration of the trade-mark under the different State laws is not necessary."

Your correspondents do not tell us why it is "obvious." Their discussion certainly does not enlighten us. They do not explain what they mean by "special circumstances" or "not necessary." But to say that it is not necessary, in the sense that it is not desirable, to register in the States requiring such registration in their penal statutes, is to say that the penalties of fine and imprisonment, which these States have enacted as additional protection against tampering with trade-marks, are of no value or advantage over the common law remedy. What your editorial says is: "If a trade-mark is to receive full protection, it must be registered at Washington for its benefits in foreign countries, and in every State and Territory (having such provision) for its benefits at home." It would be a misfortune for owners of trademarks to be advised by their counsel that registration in such States is of no value. However, your correspondents, who are doubtless sincere, do not appear to misunderstand or question the language of the court in the decision you discuss, and that is the important thing.

TRADE-MARK LEGISLATION.

What trade-mark owners might like to see stated in your journal is: Why it is that trade-marks when used on goods in commerce between the several States are not now protected by the laws of Congress, as they were formerly, and (2) why it is that if Congress may protect trade-marks when used upon goods manufactured in this country and sent to foreign countries, it may not, by the same authority, protect them when used in domestic commerce. A brief synopsis of what has transpired may, therefore, be of interest.

In the "Trade-Mark Cases" (100 U. S., 82) the Supreme Court of the United States said:

The legislation of Congress in regard to trade-marks is first seen in the act of July 8, 1870. . . . Property in trademarks and the right to their exclusive use resting on the laws of the States, the power of Congress to legislate on the subject. must be found in the Constitution of the United States.

The clauses of the Constitution upon which it has been thought such legislation might rest are: 1, That under which patents and copyrights are granted; 2, that known as the commerce clause of the Constitution—namely, "The Congress shall have power to regulate commerce with foreign nations, and among the several States, and with the Indian tribes," and, 3, the clauses which authorize the President and Congress to make treaties and enact laws to carry the same into effect.

The act of 1870 was founded upon the clause first mentioned. But in the October term of 1879 the Supreme Court of the United States said:

Any attempt to identify the essential characteristics of a trade-mark with inventions or with the writings of authors is surrounded with insurmountable difficulties.

The court also decided that the act could not be sustained under the commerce clause of the Constitution, because its provisions were applicable to all commerce (which would include commerce within the same State), and therefore was not limited to the power of Congress, stated in the commerce clause. So the act of 1870, with a supplementary act providing special penalties, fell with that decision, which swept all national trade-mark statutes from our books.

TREATY OBLIGATIONS.

But we had made treaties with foreign Governments involving the use and protection of trade-marks. Accordingly, very early in the next Congress, the forty-sixth, a bill was introduced which resulted in the present law. It was based upon the third clause above mentioned, relating to treaties. The Secretary of State urged its early enactment "to provide for a proper fulfillment of the international obligations of the Government," and it became a law March 3, 1881. An interesting feature of the bill was that, as introduced, it contained the full Constitutional commerce clause, providing for "commerce with foreign nations, and among the several States, and with the Indian tribes." But follow-

ing the reasoning of the Supreme Court, mentioned in your editorial of June 16, 1904, the Judiciary Committee of the House of Representatives, as stated by its chairman, was unanimous in the opinion that it would be unconstitutional to include the words "among the several States," and the committee reported the bill without them. After a full debate Congress approved the opinion of the Judiciary Committee and enacted the bill as reported. So, when the Supreme Court came to interpret the scope and effect of this statute, the plain intent and purpose of the law making power was beyond question, and the court said:

Obviously the act is strictly limited to lawful commerce with foreign nations and Indian tribes.

But, as was asked during the debate in the House of Representatives, if Congress may enact legislation under treaty provisions for the protection of trade-marks used on goods when sent to foreign countries, why not when the goods are sold among the different States? The answer came quickly: Because there can be no treaties between our National Government and our States.

As the act of 1870, which provided for commerce among the several States, was declared invalid, and as the present law was never intended to include such protection, it will be seen that the present situation is, as stated by the court, that

Property in trade-marks and the rights to their exclusive use rest on the laws of the States, which means the common law, together with such specific laws as the several States enacted, supplementing or superseding the common law remedy of injunction and damages by fine and imprisonment.

THE DECISION.

The recent decision did not change the law. The Supreme Court, and some of the Circuit courts, had decided substantially to the same effect, in a general way. So it did not change the protection actually accorded to owners of trade-marks by registration at Washington. But it changed and settled forever what most of them supposed they enjoyed before the decision—namely, a right to be protected against infringement in commerce between the different States in consequence of their registration at Washington. This point was raised and argued and settled in the recent decision (Warner vs. Searle), and therefore may be presumed to have been fairly in doubt before the decision.

Briefly stated, it is as follows:

Section 7 of the act provides: "Registration shall be prima facte evidence of ownership. . . . Any person who shall counterfeit, copy, imitate, &c., any trade-mark registered under this act . . . shall be liable to an action on the case for damages for the wrongful use of said trade-mark.

Appellant's counsel argued that this language gave a right to an action for damages in the United States courts even when the trade-mark was not used in foreign commerce, and said:

The offense, the wrongful use, for which the party is liable to an action, is stated plainly to be the counterfeiting, &c., . . and it would require strong imagination to understand these words to mean that no action would lie unless the wrongful user should also sell the goods, so marked, to foreign countries or Indian tribes.

But the counsel for appellees said:

From beginning to end the act concerns itself with nothing but trade-marks used it foreign commerce. . . . No ground of action is given by the statute for mere counterfeiting, . . . but having done this as an essential prerequisite, the statute provides for action for damages for wrongful use. The wrongful use, within the purview of the statute, is the use in foreign commerce or with Indian tribes.

The court said:

We cannot concur in the view that the mere counterfeiting . . . of a registered trade-mark . . . , is the ground of action in the Federal courts. . . . It is the wrongful use of the counterfeit or imitation that creates the liability. . . . When it was sought to enjoin the wrongful use it should have been made to appear that the trade-mark was then being used in that (foreign or Indian) commerce, and that that use was interfered with.

It follows, of course, that United States trade-marks may be used in commerce among the several States just as if they had not been registered at Washington.

EDWARD C. GOODWIN.

OLD ORCHARD BEACH, MAINE, July 16, 1904.

The Gompers Eight-Hour Bill. An Official Legal Opinion on the Scope of the Measure.

Washington, D. C., July 19, 1904.—A development of the first importance has occurred in the investigation now being made by the Department of Commerce and Labor regarding the desirability of the enactment of the so-called Gompers eight-hour bill. For the first time in the history of this extraordinary measure, a legal opinion by an officer of the Government as to the scope of the bill has been prepared and will no doubt be examined with great interest by all manufacturers and employers.

The initial steps in the Department's investigation were recently described in these dispatches. purpose of securing data with regard to the various classes of manufactured articles now being purchased by the Government, a circular letter was sent by the Bureau of Labor to each of the executive departments calling for a list of all articles currently contracted for, together with copies of the contracts, &c. The departments were also furnished with copies of the pending eight-hour bill. Examination of the letter of the Department of Commerce and Labor by the various officials to whom it was referred soon developed the fact that a literal compliance with the request of the Bureau of Labor would be a very laborious undertaking, while it was apparent from an examination of the bill that a part, at least, of the articles purchased by each Department would be exempt thereunder and hence need not be taken into account in the investigation. The Bureau of Labor was therefore requested to construe the bill, so that the data supplied by the departments should relate solely to contracts that would come within the scope of the proposed law. It now appear that the Bureau referred this very interesting question to W. M. Collier, solicitor of the Department, and copies of his opinion have recently been received by several of the departments, and presumably by all of

The task to which Mr. Collier has addressed himself is no small one, and the opinion he has rendered goes further than any argument heretofore submitted by the opponents of the bill to demonstrate its ambiguity and the general vagueness of its provisions. So much impressed has Mr. Collier been with the crudities and uncertainties of the measure that he does not hesitate to say that it is "vitally necessary that the bill should be amended and more specific language used." It is not extraordinary that this conclusion should be reached by the law officer of the Department of Commerce and Labor, when for nearly eight years the advocates as well as the opponents of the bill have sought in vain to place a rational construction upon its various provisions. Mr. Collier's opinion is in part as follows:

Opinion of the Solicitor.

"A careful study of the terms of this bill and of the statements and arguments made upon the several hearings before the committee to which it was referred shows that it affects only those contracts which contemplate labor to be performed after the execution of the contract and in fulfillment of it. Labor performed upon, or in connection with, the subject matter of the contract, prior to the execution of the contract, is not affected by the provisions of this bill, hence contracts by the Government for the purchase of articles in existence do not come within the scope of the bill. But all contracts which contemplate the performance of labor after their execution, except in so far as the bill expressly excludes them, are affected by the provisions of the bill, whether the labor be expressly required by the terms of the contract or be necessarily involved; hence, subject to the express exceptions made in the bill, the following two general classes of contracts fall within the scope of the

"First, contracts solely for the performance of labor; second, contracts for the sale and delivery of materials or articles, where, from the terms of the contract, or the nature of the article, or the situation of the parties, or the circumstances of the case, it is contemplated, at the time of the execution of the contract, that labor will be

performed upon, or in connection with, the material or article, in the fulfillment of the contract. Although contracts for transportation and contracts for the transmission of intelligence are contracts for labor, they are expressly excepted from the eight-hour provisions.

"In addition to these, certain contracts which belong to the second class above mentioned are excepted from the operation of the bill. They are 'contracts for such materials or articles as may usually be bought in open market, whether made to conform to particular specifications or not,' and 'contracts for the purchase of supplies by the Government, whether manufactured to conform to particular specifications or not.'

The Exceptions Vaguely Stated.

"Both of these exceptions, in my opinion, are expressed in language which is vague. In case this bill becomes a law there will necessarily be a variety of interpretations made by executive officers, by contractors, by laborers, and by the courts, until a clear and final determination has been made by the highest court of the land. My own opinion is that 'such materials or articles as may usually be bought in open market' embrace all articles and materials, a stock or quantity of which is usually kept on hand, for sale to the public, by some person making it his business to sell By virtue of the words 'whether such articles. made to conform to particular specifications or not,' it seems reasonably clear that, if an article or a material may usually be bought in the open market, a contract for such article or material is not governed by the provisions of the bill limiting work to eight hours a day, even although the article or material, by the provisions of the contract, is to be made according to particular specifications. Articles and materials, therefore, even although not of standard sizes, qualities, patterns, or types, would probably be within the exception and be excluded from the eight-hour provision, if the same general kind of article in other sizes, qualities, patterns or types was purchasable in the open market. There may be a point where variation from standard sizes, qualities, patterns, or types is so great as to make an article separate and distinct from any class usually Whether this is so must be found in the open market. determined in each case as it arises. It is impossible in advance to make a classification of the innumerable articles purchased by the Government and say which are excepted and which are not excepted by this bill. Purchasing officers of the various departments not only have the best means of knowing what are the articles purchased by their respective departments, but also whether such articles are usually purchasable in open market, and whether or not they depart to so great an extent from articles usually kept in stock for sale that the articles contracted for may be said not to be purchasable in open market. The chairman and members of the committees of the Senate and of the House, to which the bill was referred, the advocates and the opponents of its passage, upon the various hearings, expressed conflicting views as to the proper construction of the language embodying this exception, in its application to numerous articles which were mentioned. It may be proper here to say that the chairman of the Senate Committee, to which the bill was referred, Senator McComas, who was the author of the language of the exceptions under consideration, declared that in his opinion 95 per cent. of the articles purchased by the Government were excepted from the eight-hour provisions of the bill. Personally I can lay down no more specific rule than that heretofore stated by me, leaving its application to those having to do with the cases as they arise.

Meaning of "Supplies."

"The fourth exception in the bill is 'contracts for the purchase of supplies by the Government, whether manufactured according to particular specifications or not.' The word 'supplies' is one which is used with a great deal of latitude. Its definitions vary from the comprehensive ones given in Webster's Dictionary and in the Standard Dictionary, viz.: 'That which supplies a want,' 'that which is or can be supplied; available aggregate of things needed or demanded,' down through various limitations to the extremely narrow meanings given to it as used in appropriation bills, where legis-

lative provision for one class of articles has caused a general provision for 'supplies,' to be held not to include articles mentioned in other places in the bill, which would, however, ordinarily fall within the term. This uncertainty in the use of the word 'supplies,' like the vagueness of the expression 'such materials as may usually be bought in open market,' in my opinion, makes it vitally necessary that the bill should be amended and more specific language used. Uncertainty as to the scope of these exceptions will doubtless result in contractors increasing the amounts of their bids or refraining from bidding. If they bid under an impression that the contract which is sought by them is within the exception, it may thereafter be determined that it is not within the exception, and, in such event, great loss would result to them.

'The definition of the word 'supplies,' given in the dictionaries, which I have just cited, should not be adopted in the construction of this bill. To do so would be to nullify its provisions in toto. Futhermore, these definitions, in my opinion, give the primary rather than the ordinary or even the legal meaning of the word. On the other hand, I think there is no justification for giving the word the narrow meaning frequently given to it in the various appropriation bills. It should be given that meaning which it has long enjoyed in the general statutes of the Government relating to supplies. word 'supplies,' as used in Section 3709 of the Revised Statutes, has been construed by Second Comptroller Maynard and by Comptroller Tracewell (5 Comp. Dec. 65), as having reference to 'those things which the wellknown needs of the public service will from time to time require in its different branches for its successful and efficient administration.' Without considering how accurate that definition was as the word is used in Section 3709. I am of the opinion that the word 'supplies,' as used in the bill under consideration, relates to articles which are provided to meet well-known, customary and usual needs of the public service, as distinguished from exceptional or special needs. To a very large extent the idea of consumption or of destruction by use as distinguished from permanency of duration, and the consequent necessity of frequent renewal and of annual provision, is involved. Supplies ordinarily are incidentals. Furthermore, the word includes personality but not Public buildings, public works, public vessels and all unusual purchases would not be within the meaning of the word 'supplies.' This last statement is not to be construed as implying that all other articles not Doubtless many mentioned in it constitute supplies. other articles than those mentioned would not be supplies, but it is impossible to enumerate them in advance."

It is not at all certain that this opinion will supply the various departments with the desired basis for the returns which have been requested by the Bureau of Labor, but it will nevertheless serve a very useful purpose as indicating the absurdity of the proposed law when examined from an impartial legal standpoint.

W. L. C.

Labor Notes.

The C. S. Bell Company, Hillsboro, Ohio, announces the termination of the strike that has been on in its foundry department for a little over a year. The company feels very much gratified at the outcome, as it is a satisfaction to know that by making a vigorous fight against the exacting demands of the Iron Molders' Union of North America it has been found possible to defeat that organization. The only basis upon which the company would talk to any of its ex-employees concerning employment was with a distinct understanding that they withdraw from the union and surrender their charter. In addition to this, each man is required, when he makes application, to sign a card stating that he is not a member of any labor organization and will not join any such association or organization while in the company's employ without giving two weeks' notice of his intention of so doing. The company has continued to run ever since the strike was declared and did not lose a single customer for its goods. Although there was some delay

naturally in filling orders, it managed to keep everybody satisfied. The hope is expressed that other foundrymen will follow the example thus set and persist in managing their own shops in their own way, to the mutual satisfaction of the parties directly interested—the employer and the employee. While formerly the company made no demand on its molders as to whether they belonged to the union or not, it has now taken the stand that since the union interfered no union molder should work in its establishment.

The foundrymen of Worcester, Mass., affected by the molders' strike have declared that hereafter their foundries will be conducted on a nonunion basis. Accordingly notices have been posted in each of the foundries, entitled "Statements of Policy Under Which This Foundry Will be Run." The notice follows:

1. Management.—Inasmuch as we, the employers, are responsible for the work done in our shops, we therefore must determine what persons are competent to perform the work and the conditions under which the work shall be done. We will not admit of any interference with the management of our business or with the method of production of our shops.

2. Strikes and Lockouts —The members of this association

Strikes and Lockouts.—The members of this association disapprove of strikes and lockouts.

disapprove of strikes and lockouts.

3. Apprentices, Helpers and Handymen.—The number of apprentices, helpers and handymen to be employed will be determined solely by the employer.

4. Wages.—Workmen will be hired by the hourly rate, by premium system, by piece work or by contract, as the employer shall elect, and shall be paid such wages as shall be agreed upon between the workman and the employer. A fair day's work will be required of every person so employed. Every man who elects to work in our shops will be required to work peaceably and harmonlously with all his fellow employees.

ably and harmoniously with all his fellow employees.
5. Freedom of Choice.—It is the privilege of the workman to leave our employ whenever he chooses; and it is the privilege of the employer to discharge any workman whenever he sees fit. 6. Arbitration.—The above principles are essential to the

sful conduct of our business and are not subject to ar-

This declaration of the open shop is the result, not the cause, of the strike. The men went out because of a general reduction of 25 cents a day. The question of the union did not arise until the Worcester Molders' Union, with the sanction of the Iron Molders' Union of North America, declared a strike. Thereupon the employers, comprising the Reed Foundry Company, the Kabley Foundry Company, the L. W. Pond Machine & Foundry Company, James A. Colvin and the Wheeler Foundry Company, determined to apply the open shop rule to their foundries. The Reed Company, the Pond Company and James A. Colvin each has about 20 molders at work. The Kabley Company has shut down during the building of its new foundry, and the Wheeler Company has closed for some weeks. The strikers are picketing the foundries, but there has been no serious instance of violent interference.

The man who assaulted Attorney Allen in Chicago is now being tried for wrecking some electrical work, the evidence showing that the local union of electric workers was a party to the act and paid him \$200 for his work. When caught the court records were falsified and the clerk of the court was bribed, the union having later to defend him. It is said to have cost the Electric Workers' Union \$10,000 to do \$200 damage.

The Tin House Scale. - This week, at Pittsburgh, conferences were held between officials of the American Sheet & Tin Plate Company and the National Protective Association of Tin Plate Workers, for the purpose of arranging a scale of wages for tin house labor. agreement has practically been reached, the tin house employees agreeing to a material concession in wages over last year's scale. On Thursday, July 22, committees of the American Sheet & Tin Plate Company and the Amalgamated Association will meet in the Frick Building, Pittsburgh, for the purpose of considering the rebate clause in the tin plate scale. Under the terms of the clause, tin plate labor agrees to a rebate of 3 per cent. in wages on tin plate made for export. The American Sheet & Tin Plate Company desires to have this rebate continued, while the Amalgamated Association wishes it It is probable that the matter will be satisfactorily adjusted at the conference this week.

MANUFACTURING.

Iron and Steel.

The report that the 119-inch mill at the Homestead Steel Works of the Carnegie Steel Company is being remodeled is incorrect. The lengths of the rolls are being changed from 119 inch to 84 inch, which probably explains the report that the entire mill was to be remodeled and rebuilt.

The report that the Demmler Works of the American Sheet & Tin Plate Company, at Demmler, Pa., near Pittsburgh, were to be removed to the Humbert Works, at Connellsville, and the Monessen Works, at Monessen, is officially denied. There is no intention whatever of removing the Demmler Works from their present location.

The plant of the Mount Hope Iron Company, Somerset, Mass., is to be closed permanently on August 1, and the property will be sold. The product is refined iron, cut nails and spikes, the annual capacity of cut nails being 100,000 kegs. The cause assigned for the closing of the works is the death of Henry B. Leonard, Job Leonard's son, and the unwillingness of Mr. Leonard to take up the burden of the business.

The Central Iron & Steel Company, Harrisburg. Pa., is operating one-half of its newly constructed open hearth steel plant, and will begin the operation of the remainder within the next three months. The Central company formerly purchased its plate from outside concerns. The plant has been almost two years in building.

The Girard Iron & Steel Company, Philadelphia, Pa., has been chartered at Harrisburg, Pa., with a capital stock of \$25,000. Harry U. Gunsburg of Newark, N. J., is a director.

The Ohio Falls Iron Company, New Albany, Ind., has signed its new wage scale for the labor year beginning July 1, making only minor changes in the scale in force last year. The mills of the company, which have been in constant operation for the past 12 months, have closed down for a week's repairs. The company reports an output of over 35,000 tons of finished iron during the past year.

The N. & G. Taylor Company, Philadelphia, manufacturer of tin plate, with mills at Cumberland, Md., has been operating only five of its eight tin mills. On Monday, July 18, two more mills were started up, making seven out of eight in operation.

The work of rebuilding furnace No. 3 of the Carnegie Steel Company, at New Castle, Pa., is about finished, and it will be ready for operation in about a week or two. Stack No. 3 will be finished about October 1, while Nos. 1 and 4 are in operation. When stacks 2 and 3 are finished the Carnegie Steel Company will have three 600-ton furnaces and one 550-ton furnace in the New Castle district.

The blast furnace of the Struthers Furnace Company, at Struthers, Ohlo, was blown out last week. The furnace will be extensively repaired and improved before resuming blast.

It is officially denied that the Jones & Laughlin Steel Company will erect a large tube mill in the Pittsburgh district.

Stockholders of the Firth-Stirling Steel Company, Pittsburgh, with works at Demmler, Pa., met last week and elected the following directors: Lewis J. Firth of Sheffield, England; A. A. Wheelock of New York; James H. Willock, J. W. Kinnear and E. B. Clark of Pittsburgh. Officers were elected as follows: Lewis J. Firth, president; A. A. Wheelock, vice-president; E. B. Clark, treasurer and general manager, and James E. Porter, secretary. It was announced that the year was one of the most successful in the company's history. The plant is in full operation with the exception of a few furnaces being rebuilt.

The Parkersburg Iron Works, Parkersburg, W. Va., has closed down indefinitely.

The works of the Ellis & Lessig Steel & Iron Company, at Pottstown, Pa., will be sold on August 3. The sale does not mean the abandonment of the industry, but merely the closing out of the old corporation, which has been in existence for 20 years.

The property of the United States Steel Company, Everett. Mass., was sold July 16 at public auction for \$10,000 to the bondholders of the company by the International Trust Company, under foreclosure proceedings. It is understood that the company will be reorganized. The plant has been closed for some time.

The owners of Secaucus Furnace, at Secaucus, N. J., contemplate the expenditure of quite a large sum of money in improvements to the plant, the most important of which is the erection of a by-product coke plant. At the present time the stack has a capacity of 100 tons of foundry iron per day, but is capable of producing 150 tons per day with additional blowing power. The company is planning to increase the capacity 50 tons and intends to install a new blowing engine and boiler. The plant has recently been overhauled, a new boiler installed and otherwise modernized preparatory to blowing in as soon as trade conditions will permit. The more important improvements will not be made until the furnace, which is now banked, shall go in blast. The Eastern Iron Company, 11 Broadway, New York, operating Secaucus Furnace, was recently reorganized as the Hudson Iron Company.

The Bessemer plant of the Republic Iron & Steel Company at Youngstown, Ohio, started up on Monday morning, July 18. with a fair amount of orders on hand.

We are officially advised that the report that the Shelby Steel Tube Company would concentrate the manufacture of seamless tubes at its Greenville works, Greenville, Pa., is untrue. The report probably arose from the fact that some repairs are being made at the Greenville plant, but these are the usual improvements that come with summer repairs and alterations. There have been no radical changes in the manufacturing department of the company for some time, and none are contemplated.

We are officially advised that neither the Girard nor the Warren mill of the Carnegie Steel Company, at Girard and Warren, Ohio, is being dismantled or removed. The report that both of these plants would be dismantled and the equipment moved to other plants of the Carnegie Steel Company arose from the fact that the hoop mill scale governing these plants had not been signed. Conferences are to be held this week between I. W. Jenks, general manager of the plants, and the employees, and it is expected a wage scale satisfactory to the company and the employees will be arranged within a short time.

At the Shenango works of the American Sheet & Tin Plate Company, New Castle, Pa., some repairs are being made and the plant is being put in first-class shape, in readiness for starting when orders are received.

The Youngstown Iron Sheet & Tube Company, Youngstown. Ohio, has signed the Amalgamated scale, and its sheet mills will continue in operation. The scale for the skelp mill will not be signed until the settlement of the bar iron scale, on which it is based, has been effected.

The Shenango Furnace Company, Frick Building, Pittsburgh, with three blast furnaces at Sharpsville, Pa., is adding four new Massick & Crooke's hot blast stoves to its No. 2 stack. The contract for these stoves has been placed with George W. McClure, Son & Co., Bessemer Building, Pittsburgh, who are sole agents in this country for the building of this type of stove. The stoves will be 20 x 80 feet in size. The contract for the iron work has been placed with the Sharon Boiler Works. Sharon, Pa. The Shenango Furnace Company is drawing plans for the building of an entire new stack to replace No. 3 furnace. Contracts for the erection of this stack and equipment are expected to be ready in a short time.

General Machinery.

It is the intention of the Montpeller Foundry & Furnace Company, Montpeller, Ohio, which lately increased its capital stock to provide for increased business, to build a brick or concrete machine shop and install a few modern tools. The equipment plans are incomplete, and it is not yet known just what machinery will be purchased.

C. M. Kimball, Winthrop, Mass., manufacturer of metal polish, is about to erect a brick and iron addition to his plant, 27×63 feet. Equipment for the addition, including a planer, several presses and motors, are to be purchased.

The Youngstown Foundry & Machine Company, recently organized at Youngstown, Ohlo, by a consolidation of the Youngstown Foundry & Machine Company and the Youngstown Steel Casting Company, started up its steel casting department last week. The company has several large orders for steel castings in addition to a number of contracts entered prior to the consolidation.

The Seybold Machine Company, Dayton, Ohio, has purchased the equipment for the addition to its machine shop, including 250 horse-power Atlas Corliss engine, 250 horse-power boiler, 65-kw. generator, two 10 horse-power and 5 horse-power motors from the Crocker-Wheeler Company, Ampere, N. J., new milling machines, four-head planer, several large radial drills, and an overhead traveling crane.

The Atchison, Topeka & Santa Fé Railroad has not yet decided upon plans for rebuilding its passenger car repair shops at Cleburne, Texas, which were recently destroyed by fire. For temporary purposes the company will fit up a small place in the freight car repair shop at that point for doing passenger car work, and has purchased a small amount of wood working machinery.

The Gem City Boiler Company, Dayton, Ohio, which is building a new plant, will supply a portion of its machinery equipment from its old quarters. The company will, however, buy a new air compressor and cranes; other machinery requirements will be decided upon later.

The stockholders of the Harrisburg Foundry & Machine Company, Harrisburg, Pa., met last week to vote upon a proposal to increase the capital stock of the corporation for the purpose of enlarging the plant, but action was postponed and the meeting adjourned until later in the year.

The Fairmount Engineering Works, Philadelphia, Pa., have been chartered at Harrisburg with a capital stock of \$20,000. Lee S. Chadwick, 1127 Highland avenue, Chester, Pa., is a

The Lindsey & Addison Foundry & Machine Works, Pomona, Cal., has been taken over by a new corporation, the Addison Pump Company, with headquarters at Los Angeles.

The modernizing engineering firm of Dodge & Day, Philadelphia, has just completed the installation of the 340 horse-power Buckeye vertical cross compound engine, direct connected to two General Electric 100-kw. continuous current compound wound generators for the Link-Belt Engineering Company. The same concern is at work on a three-motor electrically operated locomotive crane for this company, to handle beams, angle irons and other heavy structural material for use in its new storage yard.

Power Plant Equipment.

The Champion Funding & Foundry Company, Burlington, Iowa, capitalized for \$650,000, is erecting a brick factory, 36 x 240 feet, at Dallas City, Ill., where this company will manufacture gasoline engines, gasoline stoves and gasoline lighting plants.

The Diamond Boiler Works, Minneapolis, Minn., has incorporated with a capital stock of \$50,000, purchasing the old Diamond boiler plant, which is to be enlarged. The officers of the company are H. H. Smith, president; L. K. Hull, vice-president and secretary, and J. P. Sullivan, treasurer and superintendent.

The new plant of the Globe Iron Works to be erected at Menominee, Wis., will consist of the following buildings: Main shop, 50 x 180 feet; foundry, 56 x 65 feet; pattern shop, 32 x 40 feet; shipping and stock room, 54 x 72 feet; boiler house, 48 x 52 feet, and office, 30 x 40 feet. Work will be begun soon on their erection. Fred. G. Corser is architect, and Prof. J. J. Flather of the Minnesota State University is engineer for the new plant.

The plant of the Nagle Engine & Boiler Works, Erie, Pa., is to be enlarged by an addition 120 x 250 feet. The new building will be used as a foundry and will be constructed of brick and steel.

Through Attorney Martin S. Watts, 42 Broadway, New York. the American Turbine Engine Company has been organized with a capital stock of \$1,000,000.

It is said that when additions to the plant of the Westinghouse Electric & Mfg. Company, at East Pittsburgh, have been completed the number of employees will be increased from about 8000 to 11,000.

Foundries.

As the Delphos Foundry Company, Delphos, Ohio, intends to move all the machinery from its temporary plant into the rew buildings as soon as they are completed, it is not known just what new machinery the company will purchase. It is likely, however, that considerable foundry equipment will be required.

The Timblin Engineering & Foundry Company, Creighton. Pa., has been chartered at Harrisburg, Pa., with a capital stock of \$10,000. A. Monier of Creighton, Pa., is a director

Fires.

The plant of the Prince Metallic Paint Company, at Allentown, Pa., was burned July 14, with a loss of \$5000 on machinery and \$5000 on the building.

The carriage plant of W. B. Maine & Co., at Susquehanna. N. Y., was recently damaged \$20,000 by fire.

The Lutweller Pumping Engine Company's works at Los Angeles, Cal., were recently damaged \$8000 by fire.

The plant of the Forest City Bedstead Company, Cleveland. Ohio, was partly destroyed by fire July 16. The loss is estimated at \$100,000.

The long continued strike at the foundry of the C. S. Bell Company, Hillsboro, Ill., is at an end, the company carrying its point of not recognizing the union. The company has been running its plant as well as it could with men secured from other places. The local union held a meeting a few days since and voted to give up their charter. Some of the men at once made

voted to give up their charter. Some of the men at once made application for their old positions and were re-employed. Others, however, will doubtless be unable to resume with the company, their places being already filled.

The Rockford Reel Company has been incorporated at Rockford, Ill., with a capital stock of \$2500, for the purpose of making the Rockford reels and other fishing tackle. The incorporators are Wm. J. H. Strong, M. L. Strong, E. M. Jackson and F. K. Houston.

W. W. Stall, president and manager of the Factory Exchange. Boston, recently purchased a large tract of land on the easterly side of Tinean street, Neponset, near the site of the new railread station, for the Colonial File Company, a corporation which has taken over the American File Company and Sunderland & Ogden File Company, both of South Boston. The American File Company controlled a patent process for sharpening files which has been in successful operation for some time, and Sunderland & Ogden represent a long established file making business. Buildings will be erected at once, and H. F. Cottle, treasurer and general manager, expects to turn out finished goods in the new plant within 60 days.

Three hundred Cleveland citizens, many of them members of the Cleveland Chamber of Commerce and the Builders' Exchange, were the guests of the Cleveland Stone Company on the 15th inst., at the company's quarries at North Amherst. Ohio. The members of the party left Cleveland on a special train and arrived at North Amherst an hour later, where they took an

observation train for a trip through the "gray canyon." The property of the company covers one and a half square miles, and the train was run to different points. The visitors watched the handling of immense blocks of stone, some weighing 20 tons or more. The quarry is now excavated to a depth of 160 feet and has a capacity of 200 cars daily. A souvenir, "Short Sermons on Stone," was given to the members of the party, who were served with a luncheon on the return trip in the afternoon.

The National Cutlery Company, Philadelphia, Pa., has been chartered at Harrisburg, Pa., with a capital stock of \$5000. Luke Δ . Nickerson of 2620 North Lawrence street, Philadelphia, is a director.

The Rosenthal Mfg. Company, Milwaukee, Wis., has incorporated to manufacture agricultural implements. The company is capitalized at \$20,000 and was organized by August, Emma and Gustave H. Rosenthal.

Miscellaneous

Roberts, Hall & Criss, and others of Cincinnati, Ohio, are back of a movement to establish a plant for the manufacture of Moffatt roller bearing trucks for cars. A double truck of the Moffatt type is being built at the shops of the Willard Machine & Tool Company, Cincinnati, and when completed will be shipped to the Omaha Street Car Company, which will make a thorough test of the trucks.

The Kellogg-Richmond Company, Norwich, Conn., manufacturer of steam, hot water and hot air boilers, has filed a certificate changing its name to the Kellogg-Richmond-McCrum-Howell Company, and increasing its capital stock from \$500,000 to \$1,500,000. It has absorbed the Penn Enamel Ware Company and the Uniontown Acme Radiator Company.

The plant which the new Naugatuck Chemical Company proposes to build at Naugatuck. Conn., will be a large one, according to the plans. A three-story wooden building, 80 x 120 feet, will be devoted to the manufacture of sulphuric acid. There will be a two-story brick furnace building, 50 x 100 feet, and a brick boiler house, 45 x 75 feet. In addition there will be a brick building for the offices and laboratory.

The Yantic Woolen Mill Company, Yantic, Conn., is to install three new boilers and build a new stack to the boiler house. A new mill, 50 x 50 feet, will also be built.

The Scovill Mfg. Company, Waterbury, Conn., is to increase its capacity by adding a story to one of its present buildings.

The business of George P. Tilton, manufacturer of special and artistic bronzes, has been incorporated under Massachusetts laws as the Woodland Bronze Works, Incorporated.

The Providence Gas Burner Company, Providence, R. L., has completed its removal to its new plant at 25 Blount street, where it has about three times its former manufacturing capacity.

The D. & W. Fuse Company, Providence, R. I., is about to begin the construction of its new plant in the Elmwood neighborhood of that city, details of which have already been given. The company will install considerable additional machine equipment, it is understood.

The Acme Wire Company, New Haven, Conn., recently incorporated under Connecticut laws, will manufacture bare and insulated copper wire, making a specialty of magnet wire. The company has begun manufacturing in the New England Electrical Company's plant. The New York office of the company is at 42 Broadway.

The South Atlantic Car & Mfg. Company, Waycross, Ga., is making some slight improvements to its plant. The recent increase of capital stock of the company from \$97,000 to \$125,000 was in the form of a stock dividend.

The Holmes, Booth & Hayden Company, Waterbury, Conn. one of the constituent parts of the American Brass Company, is to erect a one-story frame addition, 67×77 feet. The building will be used for the manufacture of copper wire. The plans for the building were prepared by the Benedict & Burnham Mfg. Company, which has in charge the building operations of the Holmes, Booth & Hayden Company, as well as its own.

The entire property of the New England Brick Company, comprising the greater part of the brick interests of New England, was sold at public auction, at Cambridge, Tuesday, July 5, to G. Francis R. Hart of Boston, representing the protective committee of the bondholders. The price was \$400,000. It is understood that the company will be reorganized.

The Standard Plunger Elevator Company, Worcester, Mass., is planning to erect a large addition to its shops at Jamesville, possibly the coming fall, but more probably next spring. The company has bought a considerable amount of new machinery to be installed in the present shop. These increases in capacity are because of large orders for plunger elevators previously mentioned.

The Hogan Mfg. Company, Hartford, Conn., manufacturer of plumbing supplies, contemplates erecting a large addition to its shop. The building will begin this fall if business conditions warrant.

In the fire which recently destroyed a good part of the plant of the Allegheny Automobile Company, Allegheny, Pa., not very much of the machinery was damaged beyond repair.

The company will rebuild at once, and informs us that it will have to replace some of the pulleys, shafting and belting and may have to replace some small tools, drills, reamers, dies, &c.

The capital stock of the Metropolitan Sewing Machine Company, Nyack, N. Y., has been increased from \$50,000 to \$500,000. Last January the company moved from New York to Nyack, where a brick building was secured and fitted up with modern machinery. The last six months have been employed by the company in making special tools to manufacture its various styles of high speed machines, designed for the knit underwear and bag manufacturing trades, which will shortly be placed on the market.

J. Brush Anderson, 620 Sherman avenue, Allegheny, Pa., D. W. Wakefield and E. Quackenbush have organized the Combined Rail Joint & Tie Plate Company, with a capital stock of \$10,000. The company will not manufacture the rail joint itself and is looking for a company suitably equipped to turn them out.

The Wolverine Brass Works, Grand Rapids, Mich., makers of plumbers' goods and bathroom fixtures, will erect a modern plant adjoining their present factory. A central electrical power station will be built, in which will be installed a large electrical generator, which will supply power to a system of individual motors, which will be direct connected to the presses and other machine tools in the factory buildings. To finance this improvement the capital stock of the company has been increased from \$150,000 to \$225,000. It has not yet been fully decided as to the power that will be used nor the amount and character of machinery that will be required.

The National Fire Proofing Company, Pittsburgh, has received a large contract for fire proofing for a building to be erected in Baltimore.

The Logan Motor Carriage Company, Chillicothe, Ohio, has increased its capital stock to \$100,000 and has purchased the plant of the Woodcock Foundry Company. The factory will be remodeled and machinery will be installed for the manufacture of automobiles. It is expected the plant will be in full operation in about 60 days.

The International Acheson Graphite Company, Niagara Falls, N. Y., has begun work on extensive additions to its plant which will double the capacity. The main addition will be 100 x 150 feet in size and a fine office building will also be erected. The McClintic-Marshall Construction Company of Pittsburgh has the contract for the structural steel work on the new buildings.

The Tuttle Mfg. Company has been incorporated at Rochester, N. Y., to manufacture Tuttle post hole augers and other patented articles. Capital, \$50,000. Directors: C. L. Tuttle and C. B. Ernst of Rochester; F. M. Higgins, Warsaw, N. Y.; H. G. Knowles and W. S. Knowles of Providence, R. I.

The Larkin Soap Company, Buffalo, N. Y., is enlarging its power house, which already has 10,000 horse-power boiler capacity, to afford increased facilities to its glycerine distillation plant. The cost of the addition, with equipment, will be \$50,000.

Gustave J. Holl, 1814 Highland avenue, Knoxville, Tenn., intends to establish a plant for the manufacture of his patented metallic lath. He is at present getting up drawings for a new machine to produce the lath, which he expects to put on the market in January of next year. As it will be some little time before the new machine can be built no equipment for the proposed plant will be purchased in the immediate future.

The Durable Steam Trap Company has been organized at Youngstown, Ohio, with a capital of \$20,000, and will build a factory for the manufacture of steam traps.

The Lima Mfg. Company, Lima, Ohio, will rebuild its plant at once. The new plant will be equipped with the most modern wood working machinery.

The Nicholson Furniture Company, Huntington, W. Va., will enlarge and improve its plant by additional buildings and machinery.

A new building is to be erected by the Lewisport Chair Company, Lewisport, Ky., and new machinery added. Peter Best, Jr., is general manager.

The receivers and trustees of the Southern Car & Foundry Company, Birmingham, Ala., sold some time since to the Lenoir Car Works, Lenoir City, Tenn., the Lenoir plant of the company. The sale of the Memphis, Tenn., plant has been practically made, but not finally closed. This leaves the car works at Gadsden, Ala., the only plant of the three owned by the Southern Car & Foundry Company not yet disposed of.

The Petroleum Iron Works Company, Washington, Pa., builder of oil tanks, stills and heavy plate work, has bought 17 acres of ground at Arden Station, Pa., and will remove its plant to that place.

The United States Coal & Coke Company, one of the subsidiary companies of the United States Steel Corporation, has finished the building of over 1000 coke overs in the Pocohontas region, and they have been put in operation. Work is going ahead on the building of additional overs and another block of 500 overs will be completed and started in a short time.

The Stewart Gas Range Company, Newark, N. J., recently incorporated, has succeeded to the business of the Stewart Mfg. Company. At present the company has its castings made by

contract, but in the near future it expects to build a new foundry.

The Midland Mfg. Company, Tarkio, Mo., is making a number of improvements to its plant, including the erection of three buildings, one 40×168 feet, another 40×100 feet, and a third 40×60 feet, as well as an addition to one of its departments 40×80 feet. When completed these improvements will practically double the company's capacity. The Midland Company makes agricultural implements.

The Westinghouse Air Brake Company, Pittsburgh, has secured contracts from the Central Railroad of New Jersey and the Central Railroad of Georgia, for Westinghouse air brakes. It is stated that both of these roads formerly used New York air brakes exclusively.

air brakes exclusively.

The Cambria Steel Company, Johnstown, Pa., is filling a contract for 50 steel cars for A. L. Keister & Co., owners of the Lincoln coke works in the Connellsville region. About half of the cars have been delivered and are in service. A. L. Keister and Co. have 319 ovens at the Lincoln works. They also control the Franklin plant of 50 ovens and handle the coke of a number of small operators.

The Coe Brass Mfg. Company, Torrington, Conn., is building a fire proof addition to its rolling mill, 80×150 feet.

Trade Publications.

Perforated Metal.—The Harrington & King Perforating Company, 224 North Union street, Chicago, has issued a series of pamphiets on perforated metal for various classes of work. No. 1 of this series is devoted to perforated metals for sugar. coffee and rice machinery. The booklet is handsomely printed and embellished with red rule borders. The perforated metals themselves are reproduced in glit for copper or brass, in silver for zinc and galvanized iron, and in black for black iron. Booklet No. 2 describes perforated metals for sugar houses, glucose works, coffee machinery and rice mills, including such applications as centrifugal machines or extractors, filter press plates, strainers, squeezer plates, oil, feed and starch presses, coffee screens and the like. These perforated sheets are offered in copper, brass, zinc, steel and black or galvanized iron.

NOTES.

The D'Oller Mfg. Company, 119 South Eleventh street, Philadelphia, Pa., is distributing a circular on the D'Oller universal socket and shade, and a blotter illustrating the illuminating effect of this shade as compared with an ordinary one.

The Triangle Protractor Company of Worcester, Mass., is sending out folded mailing cards ingeniously arranged so that the address of the recipient becomes the signature when he detaches the reply part. To secure one of these triangles subject to examination, it is only necessary to affix a 1-cent stamp and tear off the reply part and mail it. The inside of the folded card gives an illustration of the triangles and the prices of 6 and 9 inch sizes.

The Bickford Drill & Tool Company, Cincinnati, Ohio, has gathered under the heading of "Bouquets" fac-similes of a few testimonial letters which have been received from various works using the Bickford radial drill. Appended to the letters is a partial list of concerns which have recently installed one or more of these drills.

Warren Webster & Co., Camden, N. J., in a small folder give three figures showing sections of pipe cut out of an exhaust steam main In which serious scale incrustation has taken place. The descriptive matter states that these pipes were connected with an open heater, explains why the scale is formed and how and why it may be remedied by using a Webster heater.

In the June issue of the series of biographies, issued monthly by Wyman & Gordon of Worcester, Mass., and Cleveland, Ohlo is a short story of Cristofer Polhem, a Swede born in 1661 A. D., a pioneer in his country in the development of mechanical science. An accompanying leaflet is descriptive of crank forgings manufactured by this company and shows by half-tones of sections the change in structure effected by a special heat treatment which results in the toughening of a forging.

A pamphlet from Wm. H. Cook & Co., 752 Monadnock Bullding, Chicago, Ill., is a description of the Brooks centrifugal pump. It is accompanied with sectional views of various sizes of Brooks pumps, and gives a technical discussion of the theory involved in its design, by which is obtained the high efficiency claimed.

The Joseph Dixon Crucible Company, Jersey City, N. J., has issued a pamphlet containing some observations on leather belting, the causes of its slipping and the conditions which justify the use of a belt dressing, with special reference to Dixon's traction belt dressing and leather preservative.

Rossiter, MacGovern & Co., dealers in electrical and steam machinery, 17 Battery place, New York, recently issued a list of second-hand machinery and miscellaneous equipments. The list covers 66 pages, the items being classified and the classes indexed to facilitate finding any required piece of machinery.

The Wagner & Paimros Mfg. Company, Fairmont, W. Va. is distributing a small pamphlet which describes a patent straplink for coal cutting machine chains. The illustrations show cross sectional views of the ordinary link and this new link, and the text brings out the points of superiority of the latter, the principal one claimed being that the repair expenses are reduced by its use.

The Iron and Metal Trades

There is in nearly all quarters a kindly disposition to help an Improvement in the Iron trade along with cheerful talk. There are certainly more inquiries and there is a good deal more of estimating on work than there has been. But there is very little really reliable evidence that actual orders have increased materially, or that consumption is again on the upward swing. On the contrary, there are those who state emphatically that they expect a rather slacker month for August.

The improvement has been taking place chiefly in Wall Street, and while the attention and possibly the apprehension of buyers have been aroused, and the hopes of sellers have been quickened, it will take more than talk to lift prices in the lines in which the markets are free and open, or to justify those asked by pools.

As to the Southern Pig Iron situation there are conflicting reports. One large interest has withdrawn after meeting the market freely for weeks, and yet \$9 Iron keeps cropping up at Birmingham. In Chicago one Northern interest is reported to have disposed of 30,000 tons, which includes one lot of 12,000 tons of Malleable Iron. In the East, one leading producer has sold during the past two weeks fully 30,000 tons, the sales including during the last week one lot of 6000 tons of Gray Forge and No. 3 Foundry, and two lots, aggregating 8000 tons, of Basic Pig. Cast Iron Pipe interests report that they purchased at a shade less than some time since. A good share of the Iron needed for the Pearson end of the Pennsylvania tunnel has been covered, but it is for extended delivery and is not much of a factor for the early future.

We cannot officially confirm the reports of sales of Steel Rails to a number of roads. Unsuccessful mills did not even know of the inquiries, and none of the sales have as yet been reported at the daily meetings to the pool commissioners. This, however, is not convincing proof to the contrary.

Some goods jobs of Structural Material have been closed, and there is a good deal of talk of large inquiries for cars from the railroads and of nibbles from the same quarter on bridge work. The most important large affair coming up is the tonnage needed for the South Side Elevated at Chicago, which will amount to 25,000 to 30,000

Asking prices for Old Material are higher.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type.

Declines in			,	T) pc,
At date, one week, one mont	h and or	e year	previou	8.
	J'ly 20,	J'ly 13,	J'ne 22,	J'ly 22,
PIG IRON:	1904.	1904.	1904.	1903.
Foundry Pig No. 2, Standard,				
Philadelphia	14.25	14.25	14.50	17.75
Foundry Pig No. 2, Southern,				
Cincinnati	11.75	11.75	11.75	15.75
Foundry Pig No. 2, Local, Chicago		13.25	13.25	17.25
Bessemer Pig, Pittsburgh		12.35	12.50	18.75
Gray Forge, Pittsburgh	11.85	12.00	12.15	17.50
Lake Superior Charcoal, Chicago	14.50	14.50	14.50	21.50
BILLETS, RAILS, &c.:				
Steel Billets, Pittsburgh	23.00	23.00	23.00	27.00
Steel Billets, Philadelphia	24.00	24.00	24.00	28.25
Steel Billets, Chicago	22.00	24.00	23.00	28.00
Wire Rods, Pittsburgh	28.00	28.00	29.00	35.50
Steel Rails, Heavy, Eastern Mill	28.00	28.00	28.00	28.00
OLD MATERIAL:				
O. Steel Rails, Chicago	0.50	0.50	0.50	17.00
O. Steel Rails, Chicago	9.50	$9.50 \\ 11.50$	9.50	17.00
O. Iron Rails, Chicago			11.25	18.75
O. Iron Rails, Philadelphia	14.00	14.00	14.50	20.00
O. Car Wheels, Chicago	13.75	14.50	14.50	21.50
O. Car Wheels, Philadelphia	10.50	10.50	10.50	21.50
	10.50	11.00	11.00	21.50
Heavy Steel Scrap, Pittsburgh Heavy Steel Scrap, Chicago	10.50 9.00	10.50 9.00	9.00	19.50 16.50
		0.00	0.00	10.50
FINISHED IRON AND STEEL		* ****	4 4044	
Refined Iron Bars, Philadelphia.	1.481/2			
Common Iron Bars, Chicago	1.30	1.30	1.271/2	
Common Iron Bars, Pittsburgh.	1.30	1.30	1.30	1.70
Steel Bars, Tidewater	1.491/2			
Steel Bars, Pittsburgh	1.35	1.35	1.35	1.60
Tank Plates, Tidewater	1.741/2			
Tank Plates, Pittsburgh	1.60	1.60	1.60	1.60
Beams, Tidewater	1.741/2			
Beams, Pittsburgh	1.60	1.60	1.60	1.60
Angles, Tidewater	1.741/2			
Skelp, Grooved Steel, Pittsburgh.	1.60	1.60	1.60	1.60
Skelp, Sheared Steel, Pittsburgh.				1.85
Sheets, No. 27, Pittsburgh				1.90
	2.00	2.00	2.05	2.65
Barb Wire, f.o.b. Pittsburgh	2.50	2.50	2.50	2.60
Wire Nails, f.o.b. Pittsburgh Cut Nails, f.o.b. Pittsburgh	1.90 1.75	1.90	1.90 1.75	2.00 2.15
	1.10	1.40	1.10	2.10
METALS:				
Copper, New York		12.621/2		
Spelter, St. Louis	4.77	4.75	4.60	5.50
Lead, New York		4.20	4.20	4.121/2
Lead, St. Louis				4.121/2
Tin, New York			25.50	
Antimony, Hallett, New York			7.25	6.50
Nickel, New York	40.00	40.00	40.00	40.00
Tin Plate, Domestic, Bessemer, 100 pounds, New York	2.04	204	204	2.00
100 pounds, New 10rk	3.64	3.64	3.64	3.99

Chicago.

FISHER BUILDING, July 20, 1904.—(By Telegraph.)

Fisher Building, July 20, 1904.—(By Telegraph.)

A better tone seems to pervade the market in general than has existed for some weeks. One large Pig Iron interest here sold 30,000 tons of Northern Iron during the week under review, which is the largest single week's business that it has had since last March. Of this quantity 12,000 tons went to one consumer and the balance was scattering in smaller lots. There is still some Southern Iron being sold at \$9 in the Chicago market, but it is not, as far as can be ascertained, Standard No. 2 Iron, the low price being made as a rule to move products that are a little high in sulphur or phosphorus or not strictly up to grade in other ways. There seems to be some disposition on the part of foundrymen to lay in a store of Iron at present prices, inasmuch as they do not seem to be able to close contracts on the \$9.25 basis for delivery extending beyond the present quarter. The new Zenith Furnace, at Duluth, will be making Iron shortly, as its by-product Coke ovens are going into blast this week. Steam railroads are apparently buying nothing in the way of Rails, although some pige orders are coming in from electric reads. apparently buying nothing in the way of Rails, although some nice orders are coming in from electric roads. A 2000-ton lot was placed last week for an Indiana electric road, and a fair pick up business is coming from the urban and interurban lines throughout the West. Billets continue to be sold at \$1 to \$2 below association prices, a local forge shop buying 1500 tons last week at a considerable reduction below pool prices. The Structural Steel business is conict and forge shops are learned to the structural steel business. duction below pool prices. The Structural Steel business is quiet as far as large orders are concerned, but there is an improved demand for Steel for country bridges and also in the way of general pick up orders for city work. Plates are extremely quiet, with low prices being named on narrow sizes. Sheets are badly demoralized, there being practically no standard of value. Iron Bars are nominally, at least, unchanged in price since our last report, but there is more rumor of price cutting than there was then. The Steel Bar

situation is unchanged. Pipe and Boiler Tubes are moving fairly well—rather better than for some weeks. Cast Iron Pipe is quiet. Old Materials show temporary strength owing to the speculative demand. Metals are weak. The Coke market is as dead as it well can be.

Pig Iron.—The buying movement has started in considerable volume, particularly in Northern Iron. One leading firm here sold an aggregate of 30,000 tons during the week under review, 12,000 tons of which were Malleable to a local melter, and the balance of the business was mostly 1000 and 2000 ton lots to miscellaneous melters. The most of this business was done at or near the basis of \$13.25, Chicago, and many contracts extended well into next year. Southern Iron is held more firmly at the basis of \$9.25 to \$9.50, Birmingham, for No. 2 than it was last week, and the three leading factors state that they are in a shape where they do not care to take business that they cannot book on the basis of \$9.50. Southern producers are averse to entering business beyond the present quarter at the \$9.25 basis, as they feel that prices will be considerably higher before the fourth quarter opens. Buyers have come to the point where they are willing to make contracts for forward delivery into next year at present prices, but they are not meeting with any encouragement from Southern sellers on propositions of this character. The only prices that we reduce in this week's list are those of Ohio Strong Softeners, which are reduced in line with the weakness in Ohio prices generally. We quote.

Billets.—An order for 1500 tons of 6 x 6 Billets is said to have been placed a week ago by a local Forge shop at about \$2 per ton below association prices. The official price remains at \$24 per gross ton, Chicago, for Open Hearth or Bessemer Billets, 4 x 4 and larger.

Rails and Track Supplies.—The Rail business is practically dead as far as steam roads are concerned, though some little business is being booked for electric roads. One Indiana electric line contracted for 2000 tons with a mill east of the Pittsburgh district. The extension on the South Side elevated will require about 12 miles of 80-lb. Rails, or approximately 1600 tons. It is probable, however, that these Rails will not be bought until the Structural Steel work is well under way, which may not be for several months. Standard Sections are unchanged on the \$28 basis, and Light Sections range from \$22 to \$25 per gross ton. Angle Bars are unchanged at 1.35c. to 1.40c. Spikes are now quoted at 1.65c. to 1.70c. in car lots from mill and as high as 1.85c. in small lots from store. Track Bolts are selling at 2.20c. to 2.25c., base, from mill, with Square Nuts, and 10c. to 15c. extra for Hexagon Nuts, with an advance of about 15c. for shipment from store.

Structural Material.—The South Side elevated road will require about 25,000 tons of Structural Steel for increasing its trunk line to three tracks, instead of two, and for building branch lines to the stock yards, to Englewood and to the Lake front at Forty-first street. Specifications have not yet been submitted to the Steel factors, as there are still some financial affairs to be settled before purchases can be made. The company proposes to raise the money by the sale of bonds. No orders for Steel for any of the down town buildings have been placed this week, and there is only a moderate increase in the current bridge business. The Thompson-Starrett Company placed a contract with the Forest City Steel & Iron Company of Cleveland, Ohio, for 2500 tons of Structural Steel ready for erection for a Cleveland building. Jackson & Corbett have been awarded the contract for the Twenty-second Street Bridge, which will require about 2500 tons of Steel. About 250 tons of Steel will be furnished by Roemheld & Gallery, who have secured the contract for erecting the pumping station at Thirty-ninth street and Lake Michigan. The Chicago, Burlington & Quincy Railroad purchased 705 tons of Structural Steel from the King Bridge Company, Cleveland, Ohio, for a new bridge which that road is building at Prescott, Wis. Prices are unchanged, as follows: Beams and Channels up to and including 15 inches and Angles 3 inches on one leg and larger, 1.76½c., Chicago; Tees, \$1 per ton extra. Store prices on Structurals are as follows: Angles, Beams, Channels and Zees, base sizes, 2c. to 2.10c.; Tees, 2.05c. to 2.15c., either random lengths or cut to lengths 5 feet and over.

Plates.—Nothing new has developed in the Plate situation, and price cutting on the part of independent producers of Narrow Plates continues. Association prices on No. 9 and heavier are unchanged. This means 1.60c., Pittsburgh, for ¼ inch and heavier, 1.70c. for 3-16 inch, 1.75c. for No. 8, 1.85c. for No. 9, although it is understood that No. 9 is being shaded very considerably by association mills that are furnishing what they call heavy No. 10 at much lower prices. Store price on all gauges from No. 10 to the heaviest is 2c. to 2.10c., f.o.b. warehouse, with the usual extras for wide widths and special qualities.

Sheets.—Sheets are weak and the market badly demoralized, particularly on gauges lighter than No. 16, in spite of the fact that so many Sheet mills are closed down. The Inland Steel Company is still closed in all its departments and will remain so some time. The company has not signed the Amalgamated scale and is apparently perfectly willing to let matters rest until market conditions improve and workmen are willing to accept employment on terms offered by the company. We repeat last week's prices as representing a fair average on quotations being made, though desirable specifications would develop better prices in many instances. We quote: One Pass Cold Rolled Blue Annealed, Nos. 9 and 10, 1.76½c.; Nos. 11 and 12, 1.86½c.; Nos. 13 and 14, 1.91½c.; Nos. 15 and 16, 2.01½c.; Nos. 18 to 20, 2.01½c. to 2.06½c.; Nos. 22 to 24, 2.06½c. to 2.11½c.; No. 26, 2.11½c. to 2.66½c.; No. 27, 2.16½c. to 2.21½c.; No. 28, 2.26½c. to 2.31½c.; No. 29, 2.41½c. to 2.46½c.; No. 30, 2.51½c. to 2.56½c. Store prices on Sheets are unchanged, as follows: No. 10 and heavier, 2c. to 2.10c.; No. 12, 2.05c. to 2.15c.; No. 14, 2.10c. to 2.20c.; No. 16, 2.20c. to 2.30c.; No. 18, 2.30c. to 2.40c.; No. 20, 2.30c. to 2.40c.; No. 22, 2.35c. to 2.45c.; No. 24, 2.40c. to 2.50c.; No. 26, 2.50c. to 2.60c.; No. 27, 2.60c. to 2.70c.; No. 28, 2.70c. to 2.80c.; No. 29, 2.85c. to 2.95c. Galvanized Sheets are extremely weak, the ruling discounts being 80 and 5 to 80 and 10, Pittsburgh, for carload shipments from mill, and 75, 10 and 5 to 80 per cent. discount for smaller lots from store, Chicago.

Bars.—Much information of a contradictory character is given with reference to the Bar Iron market. The leading producer claims that 1.30c, is his minimum, and that current car lot business is being placed at 1.35c., base, half extras. This factor shows contracts with keen buyers on the 1.35c. basis for delivery into the second quarter of next year, as well as orders for quick shipment on exceptionally desirable specifications on the basis of 1.30c. At the same time buyers insist that Iron is being sold in the Chicago market at prices very much lower than this, failing, however, to back up the statements with proofs. Quite a good tonnage of Bars is moving. This applies also to Steel Bars, which are sold on the basis of 1.35c., Pittsburgh, or 1.51½c., Chicago, by mills in the association, and offered as low as 1.40c. or lower by the International Harvester Company and other interests. There is practically nothing doing in Hoops, and it remains to be seen whether the present official price of 1.71½c. rates, full extras, Chicago, can be maintained when demand does develop. Store prices have suffered no change, being as follows: Iron Bars, 1.75c., base, full extras; Steel Bars, 1.70c. to 1.80c., base, half extras; Hoops, 2.10c. rates, full extras. An Indiana car works bought about 3000 tons and a Chicago car works are in the market for a smaller tonnage. The Illinois Central Railroad has not bought the 3000 tons mentioned last week, as far as can be learned.

Merchant Steel.—Official prices on Spring Steel were cut 10c. last week. Implement and vehicle works are pretty generally closed down for their midsummer inventory and repairs, but there is a fair contract movement on foot for supplies up to January and July next. It is not expected that the Shafting Association, which meets this week, will make any change in prices, although an effort will be made to take steps to prevent the price cutting that has been going on for some months. Official prices are as follows: Open Hearth Spring Steel to the general trade, 1.90c. to 2.10c.; Smooth Finished Machinery Steel, 1.76½c. to 1.81½c.; Smooth Finished Tire, 1.71½c. to 1.76½c.; Sleigh Shoe, flat, 1.56½c. to 1.61½c.; Sleigh Shoe, concave and convex, 1.66½c. to 1.71½c.; Cutter Shoe, 2.25c. to 2.35c.; Toe Calk Steel, 2.06½c. to 2.11½c.; Crucible Tool Steel, 6½c. to Sc.; special grades of Tool Steel, 13c. and up; Shafting at 52 per cent. in car lots and 47 per cent. in less than car lots.

Merchant Pipe.—Pipe makers are looking forward to an excellent season's business this fall and winter, as indicated by the inquiries being received now from a wide variety of sources. Prices of the leading producer are unchanged and so low that shading to any marked extent is impossible. The following discounts are for carload lots, Chicago:

	Steel	Plpe.	-Guar. Wi	r'ght Iron.
	Black.	Galv.	Black.	Galv.
	Per cent.	Per cent.		Per cent.
1/4 to 3/4 inch			67.35	52.35
1/4 inch		61.35	70.35	60.35
% to 3 inches	76.85	66.85	75.85	65.85
31/2 to 6 inches		65.35	74.35	64.35
7 to 12 inches	70.85	55.35	69.85	54.35

Boiler Tubes.—Little improvement is noted in Boiler Tubes, discounts being unchanged, as follows:

1 to 1½ inches		Iron. 41.35 41.35	Seamless Steel. 52.35 40.35
2½ inches	60.35	46.35	43.35
2% to 5 inches		53.35	{ up to 4 in. 50.85
6 to 13 inches	58.35	41.35	

The reduction on store prices of Boiler Tubes has not resulted in any marked increase in business, as the boiler maker rarely lays in a stock of Tubes, buying only as he receives orders for boilers. The following are the agreed discounts from store, Chicago:

1 to 11/6 inches	Steel. 421/4	Iron. 374	Steel.
1% to 2% inches		35	371/6
21/2 Inches		371/9	40
2% to 5 inches		4716	471/2
a makes and leaves	591/	95	

Cast Iron Pipe.—None of the contracts spoken of in last week's report have been closed thus far. Enid, Okla., bought 1000 tons of Water Pipe. Prices are unchanged: \$25.50 the maximum for 4-inch Water Pipe and \$24.50 for 6-inch and heavier, and \$1 extra for Gas Pipe. Better prices than these will be named on lots of several hundred tons and above.

Old Materials.—The speculative movement is increasing rather than diminishing, and under this influence prices on some commodities have advanced. This advance is considered artificial by veterans in the trade, who believe that another slump is likely to occur as soon as the speculators become a little less eager to fill up their yards. The C., B. & Q. promulgated a list of something like 2000 tons and the Rock Island a much smaller list. We advance prices on long lengths of Steel Rails, Railroad Wrought, Dealers' Forge, Wrought Pipe, Iron and Soft Steel Axle Turnings, and reduce prices on Country Sheet, making the following quotations fairly representative of the present market at Chicago in carload lots, per gross ton:

Old Iron Rails	\$14.00 to	\$14.50
Old Steel Rails, 4 feet and over	10.50 to	10.75
Old Steel Rails, less than 4 feet	9.50 to	10.00
Heavy Relaying Rails, subject to in-		
spection	21.00 to	22.00
Heavy Relaying Rails, for side tracks	18.00 to	20.00
Old Car Wheels	10.50 to	11.00
Heavy Melting Steel Scrap	9.00 to	
Mixed Steel	8.00 to	8.50

The following quotations are per net ton:

Iron Fish Plates			. \$1	2.00 1	to	\$12.50
Iron Car Axles				4.00 1	to	14.50
Steel Car Axles:				3.001	to	13.50
No. 1 Railroad Wrought			. 1	0.50 1	to	11.00
No. 2 Railroad Wrought				9.50 1	to	
Shafting				2.50	to	13.00
No. J Dealers' Forge	0			8.50 1	to	9.00
Wrought Pipes and Flues	0 0			7.251	to	7.50
Iron Axle Turnings				7.00 t	to	7.25
Soft Steel Axle Turnings				7.001	to	7.25
Machine Shop Turnings				6.251	to	6.50
Cast Borings				3.50 1	to	4.00
Mixed Borings, &c				3.50 1	to	4.00
No. 1 Mill				6.00 1	to	6.50
Country Sheet				4.50 t	to	5.00
No. 1 Boilers, cut to Sheets and R	in	28		7.00 t	to	7.50
Heavy Cast Scrap				8.75 1	to	9.25
Stove Plate and Light Cast Scrap				7.501	to	8.00
Railroad Malleable				8.25	to	8.75
Agricultural Malleable				7.75 1		8.00

Mctals.—Demand is as weak as ever and business is extremely light. The only change that we note is an advance of \(\frac{3}{4}c \). On Pig Tin. Copper is unchanged in price, Casting being held at 12\(\frac{3}{4}c \). and Lake at 13c. Pig Tin is now quoted at 27\(\frac{3}{2}c \). O 27\(\frac{3}{4}c \). Pig Lead is without change at 4.20c. for 50-ton lots, 4.30c. for car lots and 4.50c. for less than car lots. Spelter has been reduced 0.05c. and is sold at 4.80c. to 4.90c. for car lots and 5.10c. to 5.25c. for small lots. Sheet Zinc is 6c. for car lots of 600-lb. casks and 6.25c. to 6.30c. for less than car lots. Old Metals are as follows: Copper Wire and Heavy, 11c. to 11\(\frac{1}{2}c \); Copper Bottoms, 9\(\frac{3}{2}c \), Copper Clips, 11c. to 11\(\frac{1}{2}c \), Red Brass, 9\(\frac{1}{2}c \), Red Brass Borings, 8c.; Yellow Brass, Heavy, 7\(\frac{3}{2}c \), Yellow Brass Borings, 6\(\frac{1}{2}c \), Light Brass, 5\(\frac{1}{2}c \), Tea Lead, 4c.; Zinc, 4.25c.; Pewter, No. 1, 17\(\frac{1}{2}c \), Block Tin Pipe, 22\(\frac{1}{2}c \).

Coke.—The Coke business is decidedly slow, and the recent great restriction in output in Connellsville and other regions has not terrified buyers in the least, as they are consistently following their policy of limiting their purchases to actual current needs; \$1.75 to \$1.90 per ton, f.o.b. Connellsville ovens, seems to be the going price for Foundry Coke, with prices a shade lower at Virginia and West Virginia ovens. Freight from Connellsville, Pocahontas and New River regions, \$2.65 per ton; from Sage County, Va., ovens, \$2.25 per ton.

The Milwaukee Coke & Gas Company, Chicago, has removed its office from 1103 Fisher Building to 221 North Branch street, where it has a large receiving and distributing warehouse.

Philadelphia.

FORREST BUILDING, July 19, 1904.

In the Iron and Steel markets there is practically no change from last week, except that there is a recognition of the fact that too much Pig Iron is being made. The trade have had a vague impression of that kind for some time past, but consideration of the actual figures has been somewhat startling. In the report of June 16 this matter was considered at some length, and what was said then is now being practically demonstrated, and it appears that the cutting down prices must go still further if prices are to be saved from a bad break. The conditions are not new; they are simply a development of conditions which makers of Pig Iron have already foreseen, and, while they have been rather slow in adjusting themselves to what is unavoidable, they will no doubt keep to their expressed determination to discontinue making Iron as soon as it becomes clear that there is no market for it, unless at figures below the cost of production. This point has been reached with some furnaces, while others are getting pretty close to it, so that there is little doubt that the July report will show a further decrease in production, although it may not (and probably will not) show a decrease in stocks. The chief interest, however, is in regard to consumption. If there was any certainty on that point, it would be a comparatively easy matter to regulate the supply. But there is all sorts of guessing without any definite basis to build on, and, moreover, there is always a disposition to hope for the best, even if it is not expected, and for that reason curtailment is less prompt and less effective than it should be, to prevent accumulation of stocks and a decline in prices. But the market at present is in a pivotal condition. It cannot remain that way long, although the immediate indications are not in the direction of recovery. The demand is too light for that, and as the first half of July was a period of unusually light consumption, it is almost certain that a good deal of Iron was piled on furnace banks during that period. There sho

Pig Iron.—The volume of business during the past week has been unusually light. Inquiries have been numerous, but the outcome has been extremely disappointing. Those who wanted lots of 1000 tons or more either took half the quantity or postponed the order entirely. A great many small lots were taken—carloads, or 50 to 200 or 300 ton lots—but nothing that looked like buying in advance of requirements. Prices are easier and on the average of sales they are no doubt lower than they were during the previous week, but it cannot be said that the market is very weak. Makers of Pig Iron are letting prices down easy, feeling their way cautiously to see if a point can be found at which Iron could be sold in large quantities. This point has not been reached yet, \$14.25 for No. 2 X Foundry being no inducement, and it is doubtful if \$14 would be either. At \$14.25 to \$14.50 buyers take all the Iron they need, and would take no more even if the price was lower. This is just what sellers have been trying to find out, and experience satisfies them that there is nothing to be gained by adopting other methods. If the market has to go lower they will let it go easily, reducing their output in proportion to the demand. This indicates slight changes from week to week, but for the present it is likely to be in the direction of lower figures. At the moment quotations are about as follows for Philadelphia and nearby deliveries:

No. 1 X Foundry \$14.75	to	\$15.25
No. 2 X Foundry 14.25	to	14.75
No. 2 Plain 13.50	to	13.75
Alabama No. 2, rail shipment 13.50	to	13.75
Alabama No. 2, on dock	to	13.25
Standard Gray Forge 13.00	to	13.25
Ordinary Gray Forge 12.50	to	12.75
Basic	to	13.25

Steel.—There is a fair demand for small lots for prompt shipment and on this class of business prices are about \$24. It cannot be said that the market is either strong or weak, but it is ready to assume a character in accordance as the demand may be during the next two or three weeks.

demand may be during the next two or three weeks.

Plates.—There has been quite a number of orders placed during the past week, but they were all for a small tonnage. It is evident that consumers are bare of stocks and are therefore compelled to purchase whatever material may be required from week to week. If business picks up the mills should therefore get the immediate benefit of it, but the outlook is not specially cheerful. Prices remain as follows:

	Carloads.	Part carloads.
	Cents.	Cents.
Tank Stool 1/ inch and heavier		
Tank Steel, 4-inch and heavier		
Tank Steel, 3-16-inch	. 1.0079	1.881/2
Tank Steel, Nos. 7 and 8, B. W. G	1.881/9	
Tank Steel, Nos. 9 and 10, B. W. G	1.981/9	2.031/2
Flange or Boiler Steel	1.831/2	1.881/2
Commercial Fire Box Steel	1.9316	1.981/2
Still Bottom Steel		
Locomotive Fire Box Steel	2 2314	2.281/2
Plates over 100 to 110 inches	05 nor	Ib extre
Plates over 110 to 115 inches	10 per	ID. CALLE
Plates over 110 to 110 inches	0 .10	66
Plates over 115 to 120 inches	61	44
Plates over 120 to 125 Inches	25	
Plates over 125 to 130 inches		44
Plates over 130 inches	. 1.00	68
All sketches (excepting straight tap	er	
plates varying not more than		
inches in width at ends, narrowe		
end being not less than 30 inches)		44
		44
Complete Circles		
Shell grade of Steel abandoned.		

Structural Material.—The amount of business going into the mills is not important, although there is a pretty steady run of small orders. There is nothing to indicate any special change in conditions, however, which are not as any special change in conditions, however, which are not as any special change in conditions, however, which are not as any special change in conditions. satisfactory as could be desired. Prices unchanged, as follows: Beams, Channels and Angles, 1.73½c. to 1.85c., according to specifications, and small Angles, 1.50c. to 1.55c.

Bars.—The demand is probably a shade better than it was a week ago, but there is nothing that can be regarded as very favorable. After the more or less protracted suspension of work at most of the mills during the holidays there is naturally some accumulation of business, but the outlook does not indicate any special change in the near future. Prices are pretty well held, however, at 1.48½c. to 1.55c. for either Iron or Steel Bars, price varying according to quantity, quality, &c.

Sheets.—There is a fair demand for Sheets, and manufacturers are inclined to look for an increased demand in the near future, although prices are not what they ought to be.

Old Material.—While there is no distinct improvement in prices, there is a better feeling, and holders are not as easy to deal with as they were a week or two ago. Buyers are not paying any advance, however, and with a continued light demand for finished products, they regard prices for Scrap Material as high enough: Bids and offers for deliveries in buyers' yards are about as follows:

No. 1 Steel Scrap, delivered\$11.00 to	\$11.50
Old Steel Axles delivered 14.50 to	15,00
Old Iron Axles, delivered 17.50 to	18.00
Old Iron Rails, delivered 13.75 to	14.50
Old Car Wheels, delivered 10.50 to	11.00
Choice Scrap, R. R. No. 1 Wrought, de-	
livered 12.75 to	13.25
Machinery Scrap, delivered 11.50 to	12.50
Low Phosphorus Scrap, delivered 15.50 to	16.25
Wrought Iron Pipe, delivered 9.50 to	10.00
No. 2 Forge Fire Scrap, delivered 9.00 to	9.50
No. 2 Forge Fire Scrap, Ordinary, deliv-	
ered 7.50 to	7.75
Wrought Turnings, delivered 7.75 to	5.25
Cast Borings, delivered 6.00 to	6.25
Stove Plates, delivered 8.50 to	9.00

Cleveland.

CLEVELAND, OHIO, July 19, 1904.

Iron Ore.—The shippers of Iron Ore are moving with more confidence than formerly characterized their movements. They are now planning for the shipment of a considerable quantity of Ore down the lakes. The Steel Corporation came into the market during the week and contracted for the movement of some material. The amount covered by contract and the amount that is now being chartered in wild boats by the corporation indicate that almost the normal supply will be brought down this year regardless of the enormous surplus now on hand. The movement from the lake docks to the furnace stock piles continues to improve regardless of the fact that more furnaces are going out of blast.

Pig Iron.—There has been better buying of Foundry Iron, both on contract and for immediate use. The purchases for quick consumption, however, are not large nor important. The buyers seem to be scaling down their needs as far as possible and are buying only what they must have. Prices have been sagging. Most of the prices paid are sub rosa. Some buyers have come in to cover for the next four months and some few have been buying for six months. A couple of buyers have made inquiry for their supply of material during the first quarter of next year, desiring to cover at existing prices, but the furnaces are not disposed to engage themselves past January 1 at prevailing prices. In all instances, however, consumers are buying on the basis In all instances, however, consumers are buying on the basis of a restricted melt. They are merely trying to protect themselves against possible future conditions, but are careful that they shall not exceed their requirements. Some few the foundries are buying their Coke for the second half of the year. They are paying current prices without com-plaint, the market being comparatively steady at \$2 to \$2.10 at the oven for good 72-hour Foundry Coke and \$1.50 to \$1.60 for good Furnace Coke. We quote Pig Iron prices, f.o.b. Cleveland, as follows:

Northern Col	e. No. 1	Foundry			.\$13.50	to	\$13.75
Northern Col	e, No. 2	Foundry			. 13.00	to	13.25
Northern Col	re, No. 3	Foundry			. 12.50	to	12.75
Southern Col	ie, No. 1	Foundry			. 13.25	to	13.60
Southern Col	re, No. 2	Foundry			. 12.85	to	13.10
Southern Col	e, No. 1	Soft			. 13.35	to	13.50
Southern Col	e, No. 2	Soft			. 12.85	to	13.10
Jackson Cour	ity. 8 p	er cent	Silico	n.		to	16.45
Hanging Roc							23.45
Southern Cha	recal, N	0. 1				to	17.85
Lake Superio							

Finished Iron and Steel.—The market has presented something of an anomalous condition this week. Buyers generally have spoken of an improvement, which is hardly perceptible and yet enough to be a considerable force in the perceptible and yet enough to be a considerable force in the situation. While they are more hopeful, they all point to about October 1 as the time when this better situation will develop business. On the other hand, the mills have met this announcement with something approaching a general cut in prices. Hardly a line has not been assailed in this way. The Bar Iron situation has improved a little and a few of the mills have resumed operations, but prices have receded a little as a result. The mills are coming out even by getting lower priced Scrap. The buying of Bessemer Steel Bars, which came as a result of the shutting down of the Bar Iron mills, is not so good. There has been a little the Bar Iron mills, is not so good. There has been a little better buying of Structural, but for the first time the small mills have been cutting prices, the reductions ranging about \$2 to \$3 a ton. Some of the Plate mills are in the same condition, getting business only after sacrificing revenue. The cut is said to average about \$2, although some sales have gone below that figure. The first break in Rail prices has gone below that figure. The first break in Rail prices has been reported. The mills are not cutting on the Standard Rails themselves, but have been cutting the prices of other Track Supplies in such a way as to bring the value of the whole lot down. The market for Billets has also been rather soft and the smaller mills have been cutting freely. In some instances the business has not been enough for the other mills The reductions have ranged about \$1 to \$1.50. The Sheet mills have been holding about steady. Choice specifications are scarce, and if they appeared could be placed at a pretty low figure. The base price on mill sales is about 2c. to 2.10c. on No. 27 Black Sheets.

Old Material.—The market has been rather weak and Old Material.—The market has been rather weak and unsteady. It is now understood that some of the Bar Iron mills took advantage of the low prices while they were shut down and bought a supply for some time to come at those figures. Other mills, however, are still idle and will remain so for several weeks, with the result that the Scrap prices are not improving under such buying as is going on. The prices, many of which are nominal, remain about as follows, all gross tone: Heavy Malting Steal, \$11. Old Steal Reils. which are nominal, remain about as follows, all gross tons: Heavy Melting Steel, \$11; Old Steel Rails, \$12; Old Car Wheels, \$11 to \$12. All net tons: Cast Borings, \$4; No. 1 Busheling, \$10 to \$10.50; No. 1 Railroad Wrought, \$11.50 to \$12; Wrought Turnings, \$6.50 to \$7; Iron Car Axles, \$16 to \$17; No. 1 Cast, \$10 to \$10.50; Stove Plate, \$7 to \$7.50.

Cincinnati.

FIFTH AND MAIN STS., July 20, 1904.—(By Telegraph.)
Pig Iron.—In a general way the situation as regards
Southern Iron shows some improvement; there appears to be more confidence manifested and inquiries have a better tone, and are coming from parties who are known to be needing Iron. Quite a fair sprinkling of small lots have been sold, the price in almost every instance being on a \$9, Birmingham, basis for No. 2. Most Southern furnaces are Birmingham, basis for No. 2. Most Southern furnaces are holding their products at a slightly increased figure over the week previous, and for this reason are practically out of the market. In Northern Iron the market shows a slight decline, especially in small transactions involving orders for early shipments. Outside of these early deliveries, however, there appears to be little disposition to shade prices below \$11.75 for No. 2 Foundry, Northern furnace. The general foundry trade is quiet and most of the shops are running at greatly reduced hours. A few of the inquiries that are out are as follows: An Indianapolis foundry for 1600 tons; a stove concern at Louisville wanting 600 tons; one at Evansville, Ind., 300 tons; an agricultural implement concern at ville, Ind., 300 tons; an agricultural implement concern at Columbus, Ind., 800 tons; one at Chicago, 3500 tons of No. 2 Foundry and Standard Bessemer, and several inquiries for 2 Foundry and Standard Bessemer, and several inquiries for round lots of Standard Bessemer for Valley district. Sales are fair, small lots being the rule. One agent reports the sale of 600 tons of No. 2 to a Marion foundry, 300 tons for Detroit delivery, 500 tons to a Cincinnati foundry—all said betroit delivery, 500 tons to a Cincinnati foundry—all said to have been sold on a \$9, Birmingham, basis. There is little or no Gray Forge or No. 4 Foundry to be found among the Southern furnaces, and orders for these grades are difficult to place. Freight rates from Hanging Rock district to Cincinnati, \$1.15, and from Birmingham, \$2.75. We quote f.o.b. Cincinnati, as follows:

Southern	Coke,	No.				 		. \$12.25	to	\$12.50
Southern	Coke,	No. 2	2			 		. 11.75	to	12.00
Southern	Coke,	No.	3			 		. 11.25	to	11.50
Southern	Coke.	No.	1			 		. 11.00	to	11.25
Southern	Coke,	No. 1	Soft			 		. 12.25	to	12.50
Southern	Coke.	No. 2	Soft			 		. 11.75	to	12.00
Southern	Coke,	Gray	Forg	e.	0 0	 0 0		. 10.75	to	11.00

Southern Coke, Mottl	led.										10.50 to	
Ohio Silvery, No. 1.					 						15.65 to	16.15
Lake Superior Coke,	No.	1.	 0	0			0	۰	0	۰	13.15 to	13.65
Lake Superior Coke,	No.	2.	 0	0	0 0	0	۰		0	0	12.65 to	13.15
Lake Superior Coke,	No.	3.	 0	0			0		0		12.15 to	12.65

Car Wheel and Malleable Irons

Coke.-There is no change in the Coke situation, and but very little trade is being done in this commodity. Agents report the sale of a few straggling carloads, but there is nothing startling. The best grades of 72-hour Coke are selling from \$1.75 to \$2, f.o.b. ovens.

Plates and Bars.—There is some renewed activity apparent in the demand for Structural Iron, but dealers are complaining of the general lack of interest. We quote, f.o.b. complaining of the general lack of interest. We quote, 1.6.6. Cincinnati, as follows: Iron Bars, in carload lots, 1.40c., with half extras; the same in smaller lots, 1.70c., with half extras; the same in smaller lots, 1.80c., with full extras; Base Angles, 1.73c. in carload lots; Beams and Channels in car-Angles, 1.13c. in carload lots; Beams and Channels in carload lots, 1.73c.; Plates, ¼-inch and heavier, 1.73c., in carload lots; in smaller lots, 2c.; Sheets, 16-gauge, in carload lots, 2.05c.; in smaller lots, 2.60c.; 14-gauge, in carload lots, 1.95c.; in smaller lots, 2.50c.; Steel Tire, ¾ x 3-16 and heavier, 1.68c. in carload lots.

Old Material.-Business in this class of material is ex-Old Material.—Business in this class of material is exceedingly quiet; in fact, transactions reported are practically nothing. Prices, so far as we learn, remain unchanged. We quote dealers' prices, f.o.b. Cincinnati, as follows: No. 1 Railroad Wrought Scrap, \$11 to \$11.50 per net ton; No. 1 Cast Scrap, \$9.25 per net ton; Iron Rails, \$14.50 per gross ton; Steel Rails, rolling mill lengths, \$11 to \$11.50 per gross ton; Iron Axles, \$15 per net ton; Car Wheels, \$11 to \$11.50 per gross ton; Heavy Melting Scrap, \$11.50 per gross ton; Low Phosphorus Scrap, \$11.50 to \$12 per gross ton. per gross ton.

Pittsburgh.

PARK BUILDING, July 20, 1904.—(By Telegraph.)

PARK BUILDING, July 20, 1804.—(By Tetegraph.)

Pig Iron.—Inquiries for Bessemer and Foundry Iron
are heavier than at any time for the past two months, and
a good deal of tonnage is being sold at higher prices than
prevailed two or three weeks ago. Bessemer Iron for
prompt shipment has sold as high as \$11.80, Valley furnace,
equal to \$12.65, Pittsburgh. For shipment over balance of
this year Bessemer Iron is held firmly at \$12, at furnace,
and the leading makers refuse to sell below this price. The and the leading makers refuse to sell below this price. The market on Foundry Iron has improved considerably in demand, and prices are firmer and slightly higher. Small lots of Northern No. 2 Foundry can be bought for prompt shipment at \$11.65 to \$11.75, Valley, or \$12.50 to \$12.60, Pittsburgh. However, most of the leading makers are holding their Iron firmly for \$12, at furnace, and say that in preference to selling below this price they will close down their furnaces. The feeling is strong that Pig Iron has touched bottom, and with the heavy decrease in output and improved demand it is believed that prices will soon materially improve. Forge Iron is quiet in demand and is held at proved demand it is believed that prices will soon materially improve. Forge Iron is quiet in demand and is held at \$11, at furnace, or \$11.85, Pittsburgh. We note a sale of 500 tons of Bessemer Iron at \$11.65, Valley, and one of 1000 tons at \$11.80, Valley, or \$12.65, Pittsburgh. We also note sales of 600 tons of Northern Forge Iron at \$11.85, Pittsburgh, and one of 500 tons of Northern No. 2 Foundry, for July and August shipment, at \$11.65, Valley, or \$12.50, Pittsburgh.

-There are more inquiries in the market for Billets and Sheet and Tin Bars than for some time. It is stated that the mills in the Billet Association are making a determined effort to maintain official prices, and that any reports of cutting are to be handled by a committee formed for that purpose. There are several small Open Hearth Steel plants outside the agreement that are still offering small lots of Open Hearth Billets and Bars at less than the official prices. We quote Bessemer and Open Hearth Billets at \$23, Long Sheet and Tin Bars at \$24, and Cut Bars, \$24.50, f.o.b. cars, Pittsburgh, Youngstown or Wheeling delivery.

Pipes and Tubes.—An informal meeting of a number of independent Pipe mills was held in Pittsburgh on Tuesday, July 19, at which matters of general interest to the trade were discussed. No change was made in prices and reports are that tonnage in Pipes is improving to some extent and that prices are being more rigidly held than for come time. some time.

(By Mail.)

The better feeling in the Iron trade referred to in this report last week has become more pronounced and there is no doubt whatever but that the whole market, especially on Pig Iron, is looking better and there is a firmer tone to prices. A feature of the week was the starting up in full of the Homestead Steel works of the Carnegie Steel Company in all departments, with the exception of the 119-inch mill, the rolls in which are being changed to 84 inches, which prevented the starting of this department. The employees of the Homestead works were so much elated over the starting up in full of the plant that a fireworks display was given in Homestead. It is understood that a heavy tonnage has been booked for the Homestead works, and this plant is expected to operate to practically full capacity for the balance of the year. Other large manufacturing concerns report a noticeable increase in tonnage and confidently expect that by September we will have a heavy buying movement that will give the mills plenty of work.

Consumers of Pig Iron who held off making purchases now realize that perhaps they delayed too long, as the Pig Iron market is distinctly better and prices for Iron for delivery over balance of this year are from 25c. to 50c. a ton higher. Most of the Valley furnaces are holding Bessemer Pig Iron at \$12, at furnace, for shipment in October, November and December, while for this and next month, \$11.65 to \$11.80, at furnace, is quoted. Several sales of Bessemer fron for July and August delivery are reported at \$11.80, at furnace. Basic Iron is also firmer, with most furnaces quoting \$11.50, at furnace, for prompt delivery, and \$11.75 to \$12 for last quarter. Foundry Iron is also showing betterment in demand and prices, some furnaces refusing to shade \$12, at furnace, while others quote \$11.65 to \$11.75 for prompt delivery. As yet, Forge Iron has not shown any betterment in demand or prices and is held at \$11 to \$11.15, Valley furnace, or \$11.85 to \$12, Pittsburgh.

The report of the condition of blast furnaces, issued by

the Bessemer Pig Iron Association, is of interest as showing the heavy decrease in production of Pig Iron in June. The report shows that out of a total of 178 stacks, with a daily capacity of 50,512 tons, 107 stacks were in blast, with a daily capacity of 33,053 tons, and 71 stacks were out, with a daily capacity of 33,053 tons, and 71 stacks were out, with a daily capacity of 17,459 tons. In other words, 65 per cent. of the furnaces were in blast and 35 per cent. out on July 1. On June 1 only 20 per cent. of the furnaces were out, show-On June 1 only 20 per cent. of the furnaces were out, showing an increase in idle capacity of 15 per cent. in June. The greatest falling off in output was in the furnaces of the Steel Corporation, nearly half the stacks of this interest being idle on July 1. It is expected that the report for August 1 will show at least 45 per cent. of the stacks idle. This heavy decrease in output of Pig Iron has undoubtedly helped the market very much, as it has prevented heavy stocks of Pig Iron being piled up, which always has the effect of weakening prices.

Ferromanganese.—The market continues somewhat quiet, as most of the leading consumers have covered their requirements for a considerable time ahead. We quote English and domestic Ferro at \$41.50 to \$42, Pittsburgh.

Muck Bar.—Now that some of the Bar Iron mills that have been idle for inventory and repairs are getting started it is believed demand for Muck Bar, which has been very dull for some time, will soon improve. We quote best grades of neutral Muck Bar at \$23.50 to \$24, Pittsburgh.

Wire Rods.—Inquiries for Rods are better than for some time, one of the leading Western Wire concerns being in the market for 4000 to 5000 tons, which is expected to be closed this week. The business will probably go to a Chicago interest. We quote Bessemer and Open Hearth Rods at \$28, Pittsburgh. A few small sales of Chain Rods have recently been made in this district.

Skelp.—Some inquiries for Skelp have come up in the past week, amounting to 2000 to 3000 tons. We quote Grooved Iron Skelp at 1.40c. to 1.45c.; Sheared, 1.45c. to 1.50c., and Grooved and Sheared Steel Skelp at 1.32½c. to 1.35c., Pittsburgh.

Steel Rails.—Considerable tonnage in Steel Rails has been placed in the past week or ten days. An Atlantic seaboard road has placed an order for 20,000 tons with the Carnegie Steel Company, while the Chicago & Great Western has placed 12,000 tons, the Chicago & Northwestern 10,000 and the Illinois Central 8000, the latter three contracts going to the Illinois Steel Company. There has also been some tonnage placed by the smaller roads, one local Coal railroad having placed 500 tons with the Carnegie Steel Company. The suburban traction lines are also buyers of Rails, mostly Seconds, and in fair sized lots. We quote at \$28, at mill, for Standard Sections, the mills equalizing freight. Light Rails are held at \$20 and upward, according to weight.

Structural Material.—General conditions in the Structural trade are better than a month ago. Railroad bridge work is increasing, the Queen and Crescent and other leading roads having inquiries out for a considerable tonnage. Local contracts placed recently include two bridges to be built in this city, requiring 2200 tons, and which went to Fort Pitt Bridge Company. It is understood that prices for erecting work are very low, the leading Structural concerns doing some very close figuring. A great deal of new work is in sight, but it is a question whether much of this will be placed this year. We quote: Beams and Channels, up to 15-inch, 1.60c.; over 15-inch, 1.70c.; Angles, 3 x 2 up to 6 x 6, 1.60c.; Zees, 1.60c.; Tees, 1.60c.; Steel Bars, 1.60c., half extras, at mill; Universal and Sheared Plates, 1.60c.

Plates.—Conditions in the Plate trade are showing improvement, tonnage being better than for some time. All Structural Material. General conditions in the Struc-

the Plate mills at the Shoenberger Works of the American Steel & Wire Company and at the Homestead Steel Works of the Carnegie Steel Company, with the exception of the 119-inch mill, are in full operation and with considerable tonnage ahead. Some good sized car contracts have been placed recently, among these being one order for 5000 cars for the Cincinnati, Hamilton & Dayton, which went to the American Car & Foundry Company. Only part of the Plates and Shapes for these cars have been placed, and the mills expect to book considerable tonnage before this month mills expect to book considerable tonnage before this month is out. There is still some complaint of low prices on narrow sized Plates, rolled by mills outside the association. Official prices are as follows: Tank Plate, ¼-inch thick and up to 100 inches in width, 1.60c., at mill, Pittsburgh; Flange and Boiler Steel, 1.70c.; Marine, A. B., M. A. and ordinary Fire Box, 1.80c.; Still Bottom, 1.90c.; Locomotive Fire Box, not less than 2.10c., and up to 3c.; Plates over 100 inches to 110 inches in width, not less than 5c. per 100 lbs. extra; Plates over 110 inches to 115 inches wide, not less than 10c. extra; Plates over 120 inches to 125 inches wide, not less than 25c. extra: Plates over 125 inches to 130 than 10c. extra; Plates over 120 inches to 125 inches wide, not less than 25c. extra; Plates over 125 inches to 130 inches wide, not less than 50c. extra; Plates over 130 inches wide, not less than \$1 extra; Plates 3-16 inch in thickness, \$2 extra; gauges Nos. 7 and 8, \$3 extra; No. 9, \$5 extra. Above prices are on carload lots, f.o.b. at mill, Pittsburgh, with 5c. extra for less than carload lots; terms, net cash in 30 days, and for all points of delivery in the United States except the Pacific Coast. except the Pacific Coast.

Sheets.—While demand for Sheets is only moderate, inquiries are better and the Sheet mills confidently expect a good deal of tonnage to be placed before long. Demand for Sheets usually shows improvement in August and September and this year is expected to be no exception. Specifications on contracts are coming in quite freely and general conditions in the Sheet trade are better than for some time. quote as follows: No. 26 Black Sheets, box annealed, one pass through cold rolls, 1.95c.; No. 27, 2c.; No. 28, 2.10c. For very desirable specifications some mills might shade these prices about \$1 a ton. Galvanized Sheets are selling at about \$0 and 7½ per cent. off. In net prices this discount figures out as follows: Nos. 22 and 24 Galvanized Sheets, 2.59c.; Nos. 25 and 26, 2.77c.; No. 27, 2.96c., and No. 28, 3.14c. All above prices are for carloads and larger lots, jobbers charging the usual advances for small lots from store.

Iron and Steel Bars .- Demand for Iron Bars is better than for some time, some good sized orders having been placed by the car interests, notably American Car & Foundry Com-pany. The tone of the market is firmer and 1.30c., Pitts-burgh, on Refined Bar Iron seems to be minimum of the market. Possibly some mills might sell Iron Bars made from part Scrap at a slightly lower figure. Demand for Steel Bars is also better and mills report that specifications are coming in quite freely. The improved condition in the Bar trade is partly due to the fact that a good many mills are closed for inventory and repairs, which takes considerable tonnage out of the market. We quote Steel Bars at 1.35c., Pittsburgh, in carloads and larger lots, with the usual dif-ferential for less than carloads. On Open Hearth Bars \$1 a ton advance is charged.

Railroad Spikes.—Demand for Spikes is only fair and we quote at \$1.60 per 100 lbs., f.o.b. Pittsburgh, for ordinary orders. For carloads and larger lots \$1.55 per 100 lbs. would be named.

Hoops and Bands.—The Hoop mills of the Carnegie Steel Company at Warren, Girard and Youngstown are still idle, pending settlement of the Hoop scales. A conference between the officials and the men will likely be held this week, when it is expected a settlement of the scale will be reached. New tonnage in Hoops is very light, consumers being covered by contracts. We quote Steel Hoops at 1.55c and Bands at 1.35c extress as per Steel card. 1.55c. and Bands at 1.35c., extras as per Steel card.

Merchant Pipe.—A meeting of the independent Pipe mills is being held in the Hotel Lincoln to-day (Tuesday) and is still in session. It is stated that official discounts adopted on July 1 have been more or less shaded and it was to consider this matter that the meeting was called. Deto consider this matter that the meeting was called. Demand for Merchant sizes of Pipe is only fair, but several large contracts for Line Pipe have recently been placed. Discounts to consumers in carloads, which are shaded to some extent on desirable orders, are as follows:

30	erol	ant	D	Inc
JAK	CIUN	PULL P		·pe.

	_Ste	el.—	Ir	on.
	lack.	Galv. Per cent. 55 63 68 ¹ / ₂ 67 57	Black.	Galv.
Extra strong. plain ends, % to 8 luches Double extra strong,	69	59	. 68	58
plain ends, 34 to 8	60	50	56	46

Boiler Tubes .- Demand for Boiler Tubes is quiet and

prices are more or less shaded. Discounts to consumers in less than carload lots are as follows:

Boiler Tubes.	Steel. Ir	nn
1 to 11/2 inches	48	43
1% to 2% inches	60	43
2½ inches	62	48
2% to 5 inches	68	55
6 to 13 inches	60	43

In carload lots discounts on Boiler Tubes are two points lower than the above.

Merchant Steel .-A meeting of the Shafting Association merchant Steel.—A meeting of the Shatting Association is being held to-day (Tuesday) in Frontenac, Thousand Islands, but it is not expected any change in prices will be lands, but it is not expected any change in prices will be made. General conditions in the Merchant Steel trade are a little better and it is believed demand in the fall months, especially for Implement Steels, will be heavy. We quote: Plow Slabs, ¾ inch and heavier, 1.60c.; Tire Steel, 1.55c. to 1.60c.; Sleigh Shoe, flat, 1.40c. to 1.45c.; Cutter Shoes, 2.05c. to 2.10c.; Plow Steel, 6 inches and under, 1.35c.; Toe Calk Steel, 1.85c. to 1.90c.; Crucible Tool Steel, 6c. to 8c. for ordinary grades and 12c and unward for special grades. ordinary grades and 12c. and upward for special grades. Shafting is 52 per cent. off in carloads and 47 per cent. in less than carloads, delivered.

Spelter.—Demand is dull and prices are weaker. We the Prime Western grades at 4.72½c. to 4.77½c., Pittsquote burgh.

Tin Plate.-The strike of the meat packers in the Chi-111 Plate.—The strike of the meat packers in the Chicago district is having a serious effect on shipments of Tin Plate, as a number of the leading canning interests have shut off all shipments until the strike is over. For other points of delivery, notably Baltimore, it is said slight premiums in prices are being paid for Tin Plate for prompt shipments. We quote 100 lb Cokes at \$2.40 Distributed. We quote 100-lb. Cokes at \$3.40, Pittsburgh.

Coke.-Conditions in the Coke trade are a little better, demand for both Furnace and Foundry Coke showing some improvement, while prices also have a firmer tone. The leading producers of Connellsville Coke are now quoting \$1.50 for Furnace and \$1.85 for 72-hour Foundry. These prices might be slightly shaded by a few of the smaller producers. Main Line Furnace Coke is selling as low as \$1.25 a ton and Foundry \$1.65 a ton, at oven.

Foundry \$1.65 a ton, at oven.

Iron and Steel Scrap.—There is a little better inquiry for Scrap, but the actual tonnage being bought by consumers is very small. Dealers' prices are about as follows: Heavy Melting Scrap, \$10.50, gross tons; No. 1 Wrought Scrap, \$10 to \$10.50, net tons; Cast Iron Turnings, \$8, gross tons; Cast Iron Borings, \$5.50 to \$6, gross tons; No. 1 Busheling Scrap, \$8.50, net tons; Bundled Sheet Scrap, \$7 to \$7.50, gross tons. We have not heard of any sales of Scrap of consequence in this market for some time. sequence in this market for some time.

The Susquehanna Iron & Steel Company, Columbia, Pa., manufacturer of merchant pipe and boiler tubes, has opened an office in the Empire Building, Pittsburgh, with George A. Dickson in charge.

Dickson in charge.

The Roberts Machine Company, East Palestine, Ohio, selling agent for the Ohio gas engines, has opened a branch office in rooms 69 and 70, Schmidt Building, Pittsburgh.

The Jones & Laughlin Steel Company, Pittsburgh, has

The Jones & Laughlin Steel Company, Pittsburgh, has opened an office in San Francisco, Cal., with E. A. Selfridge in charge of the Pacific Coast territory.

Machinists and Molders at Pittsburgh.

PITTSBURGH, PA., July 20, 1904. - The molders employed in the foundries of the Pittsburgh district have accepted the recent reduction in wages proposed by the foundries, and are now working on the basis of \$3.00 per day for nine hours. It is said that a few small foundries are paying slightly under this rate. John Barnett, Pittsburgh business agent of the Iron Molders' Union, has prepared an agreement which he is sending to the foundrymen to sign, but it is believed that they will refuse to recognize it and will operate their foundries in the future without signing wage agreements of any kind. The only trouble that came up was at the foundry of the Pittsburgh Steel Foundry at Glassport, who discharged on Saturday, July 16. all its union molders, and is now employing only nonunion men. While it is not running full it has secured a good many nonunion men, and expects to be running to full capacity within a short time.

The machinists in the Pittsburgh district have also accepted a reduction of 10 per cent., the minimum rate for machinists in Pittsburgh now being 27 cents an hour for nine hours' work. The machinists decided that it would be bad policy to go on strike at this time, owing to the scarcity of work, and accepted the 10 per cent. reduction without protest.

Birmingham.

(By Telegraph.)

BIRMINGHAM, ALA., July 19, 1904. Since the last report the tone of the Iron market has improved and prices have been advanced. Quotations made on a basis of \$9.25 for No. 2 Foundry have been increased 25c. to 50c., with some interests booking orders for the balance of the year, while other interests are confining their operations to within 60 days' delivery.

The demand is spotted. With some interests the actual demand is fully equal to and exceeds the output. With others it is reported as only moderate. Your correspondent has seen orders based on current values covering the balance of the year, and some of them for good round lots. There is no effort being made to induce buying, but there is a feeling that business offering must be cared for at current

It seems clear now that actual transactions are on the basis of \$9.50 for No. 2 Foundry, with some sales reported at higher values. The differences between the Coal operators and the miners have not yet been adjusted, but there is a feeling that in a short time an agreement will be reached. About one-third of the miners in the district are at work, with the others to large extent inclined to that course with the others to large extent inclined to that course. The large interests who lease the convicts are employing them where available and are managing to keep plants going without serious inconvenience.

Coke from Southwest Virginia is being delivered at prices

in the district certainly as cheap as it can be produced here. There is more or less caucusing between operators and miners, and the operators claim that the miners' ranks are being gradually disintegrated by men returning to work, but affairs are far from being on a settled basis.

The New York Machinery Market.

NEW YORK, July 20, 1904.

In viewing the present situation, one is forced to accept the maxim, "large bodies move slowly." During the last week several large important projects which have tried the patience of the most patient through their long drawn out manœuvering have finally reached the closing point. Certain influential contracts were awarded, indicating that the projects are moving. Other matters which have remained projects are moving. Other matters which have remained dormant for some little time since their inception gave evidence of still containing the spark of life, and the week under review also brought to the surface some new things to add fresh interest to the situation. Then, on the other hand, there are the propositions which through their latency are becoming old, but which, in view of the history of the business just consummated, hold forth the hope of being suddenly settled at any time thus necessitating constant suddenly settled at any time, thus necessitating constant vigilance on the part of the trade.

As we stated last week, this is a market of big things, and As we stated last week, this is a market of high things, and while the optimist can see conditions gradually adjusting themselves into better shape, the other fellow lays atress upon the fact that the consumer at large is still following a course of procrastination and is withholding his manifold small orders, which constitute the great volume of general business. It is claimed, however, that the large purchaser starts the ball rolling, and that when the little fellow sees him display enough confidence in the general situation to place his contracts he soon follows with his orders.

In our last issue we stated unofficially that the contract

for half of the 108,000 tons of iron castings required by S. Pearson & Son, Limited, the contractors building the East River section of the Pennsylvania Railroad's New York River section of the Pennsylvania Railroad's New York tunnel, had been awarded to the Davies & Thomas Company of Catasaqua, Pa. We now have an official confirmation of this statement. Before the contract becomes operative, however, it will require the approval of the Pennsylvania Railroad, which formality has, however, not been complied with as yet. We learn on good authority that the contract for the second half of this material has also been practically awarded to the Davies & Thomas Company, but at the offices of the Pearson Company it was stated to-day that this contract had not been officially signed as yet. It at the offices of the Pearson Company it was stated to-day that this contract had not been officially signed as yet. It is reported that the contract for 3900 tons of bolts and nuts to be used in the work was awarded to the Cambria Steel Company. In this case it is also stated that the contract has not been officially completed. We are officially advised that no other contracts have been awarded. E. W. Moir, who was in charge of the Pearson Company's interests in connection with this project has not provided to London and who was in charge of the Pearson Company's interests in connection with this project, has returned to London and Mr. Japp is now in charge. The New York offices have been removed from 128 Broadway to Long Island City. They are now located in the Long Island Railroad express shed near the Thirty-fourth Street Ferry terminal.

No contracts have been awarded by the O'Rourke Engineering Construction Company since our last report. Matters connected with this end of the work stand just as they did a week ago.

did a week ago.

In connection with the subject of the great power stations to be located at each end of the tunnel system for fur-

nishing the electrical energy for operating the cars when the tunnel is completed matters are moving along very favorably. It will be recalled that the firm of Westinghouse, Church, Kerr & Co. was engaged in the capacity of consulting and contracting engineers for these stations. They now working on half of the installation for the station at the Long Island end of the system, and are placing contracts for the equipment. Some time ago we mentioned the fact that Westinghouse turbo-generators would be employed as prime movers. The contracts for the boilers have been placed with the Babcock & Wilcox Company. These call for 32 boilers of 520 horse-power, each aggregating 16,640 boiler horse-power. A contract has just been placed with the Green Fuel Economizer Company for economizers to be operated in connection with these boilers. Specifications have just been issued for the electric traveling cranes, and ompetitive designs are being prepared by the manufacturers of coal and ashes handling machinery covering this end of the equipment. The specifications for the cranes call for one electric traveler of 55 tons capacity and six hand cranes, each of 20 tons capacity. While a cable system has been suggested for the coal and ashes conveying apparatus, we understand that designs will be considered embodying other principles of construction. We understand that the plans for the other half of this station, and also for the entire station to be constructed at the New Jersey end of the tunnel have not been completed as yet, and the subject of equipment of these plants will not be brought up for consideration until the present work at Long Island City is completed.

Owing to a similarity of interests in the two concerns, and also in view of the fact that one engineering department practically serves both, the work of the New York Edison Company and the Brooklyn Rapid Transit Company is generally referred to in the trade as if the two concerns were one. As we have noted on numerous occasions, these interests have a great amount of new work in view. Matters in connection with this contemplated work are now progressing so rapidly that the trade are following them with inreased energy. Some time ago we noted the fact that the New York Edison Company placed a contract with the General Electric Company for a 7500-kw. turbo generator to be installed at the Waterside station. This, we understand, is about finished and will soon be in operation. The company has recently awarded contracts to the General Electric Company for three additional Curtis turbine sets of about 5000 kw. each, which will also be installed in the Electric Company for three additional Curtis turbine sets of about 5000 kw. each, which will also be installed in the Waterside station. The Brooklyn Rapid Transit Company has perfected its plans for the new Kent avenue station to the extent of placing the contract for the steel structure to be employed in the building. This was awarded yesterday. We understand that it has been practically decided to equip this entire station with turbo generators, and that the plans provide for 12 sets of about 5500 kw. each. Orders have been placed for two of these sets, an order for one having been given to the Westinghouse Company and another to the Allis Company. We are officially advised of the placing of these contracts, but the impression which prevails generally in the street is that the Allis interests have been considerably in the street is that the Allis interests have been considerably more successful than is apparent upon the face of this statement. It is generally reported in the machinery district that contracts were placed for six Allis machines. When told that the purchasers admitted the placing of an order for but one machine of this type, parties in the trade held to the belief that an option was given for the five additional sets.

Another development indicating progress in connection with the New York terminal electrification scheme of the New York Central & Hudson River Railroad transpired yes-New York Central & Hudson River Railroad transpired yesterday with the filing of plans with the Building Department for the construction of one of the large power houses embodied in the project. The building will be located on 149th street, 95 feet west of Long Island Sound. According to the plans, it will be three stories high, 236 feet long and 167 feet wide. It will cost about \$500,000. The contract for the foundation, which will be of concrete, has been awarded to E. C. Weeks & Son. This station is to furnish electricity for running all of the trains through the New York Central Tunnel and from the Grand Central Station as far north as the Bronx. Another station will be located about at Yonkers. about at Yonkers.

Our reference to the placing of contracts for turbo-generators by the New York Edison-Brooklyn Rapid Transit interests calls to mind the present comments in the trade concerning the General Electric-Allis merger rumors. It is held in the trade that the new interests which assumed control of the Allis-Chalmers Company in the recent reorganization being largely interested in the General Electric Company will insure harmonious relationship between these two

we are officially advised by the Crocker-Wheeler Company of Ampere, N. J., that there is no truth in the gossip in the trade alluded to in our last issue to the effect that the Allis-Chalmers Company at one time had an option on the Crocker-Wheeler plant, which was said to have expired in April last. As a matter of fact, negotiations at one time pending between the two companies ceased on the final refusal to grant such an option. It is true that there was

a reciprocal selling arrangement, under which the products of each company were sold to the other at a specified advance on shop cost, but that is the only common interest. It will be understood that in the absence of any option at the terms stated the Crocker-Wheeler Company could not work into stock under such a contract. We are advised that it is true that the Crocker-Wheeler Company did work overtime, but this was due to the fact that the business of the company maintained a pace at a time when the electrical industries at large had begun to feel the effects of the general falling off which occurred last winter and spring. It is officially stated that the December shipments of the company represented the maximum in its history. The Crocker-Wheeler Company objects to the implication that it has been a leader in making concessions in prices, and it points in proof thereof to prices made in the spring and also quite recently on Government work, on which the figures of all competitors are officially known.

The International Steam Pump Company is now particle contracts for large quantities of accessories required in putting the new plant at Harrison, N. J., into shape for operation. These contracts include such materials as piping, and foundry equipment. The The International Steam Pump Company is now placing eration. These contracts include such materials as piping, electric wiring, elevators and foundry equipment. The contract for the electric wiring has been awarded to John C. Livingston, Jr., & Co. M. W. Kellogg & Co. received the contract for the piping, and Wm. Sellers & Co., Incorporated, received the order for such power transmission machinery as will be required. The Sprague Electric Company was awarded an order for 20 small electric traveling cranes to be used in connection with the molding machines. The Otis Elevator Company received contracts for some 20 elevators to be used about the plant, ten of which will be employed in the machine shop and two in the foundries. The Power & Mining Machinery Company secured a contract for rower & Mining Machinery Company secured a contract for the complete gas producing plant, which will generate gas to be used in connection with the core ovens and for the drying of molds. The J. W. Paxson Company received a contract for four 50-ton cupolas, and the Tilghman & Brooksbank Sand Blast Company received a contract for the complete sand blast equipment to be used for cleaning the castings, &c., which is said to be the largest sand blast equipment ever ordered. The Central Foundry Company received an order for high pressure ground joint piping to be used in connection with the elevator service.

received an order for high pressure ground joint piping to be used in connection with the elevator service.

The Pennsylvania Steel Company, who will build a 600-foot addition to the large new bridge and construction shop at Steelton, Pa., is receiving bids for the cranes. There will be 19 cranes in all, ranging from 2 to 60 tons capacity each. Four will be of the overhead electric traveling type and 15 will be of a special traveling wall jib type. This company has purchased three special gantry cranes, having three hoists each of 60, 25 and 10 tons capacity, from the

Alliance Machine Company of Alliance, Ohio.

Westinghouse, Church, Kerr & Co. have issued specifications for a 20-ton crane to be installed in the Hartford,

Conn., electric light plant.

In the machine tool trade the most interesting matter now up for consideration is the specifications of the Pennsylvania Railroad Company, which we referred to in our last report. Since our last writing this list has grown conlast report. Since our last writing this list has grown considerably, as the company has from day to day issued addition requests for proposals. The general run of the machinery specified has been in the direction of smaller or medium sized tools. It is reported in the trade that a large number of the tools are intended for installation in the proposed shops at Trenton, N. J. The aggregate of these inquiries is now so great as to constitute an unusually large list. Nothing has been purchased as yet.

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So far as we can learn, no orders have been placed as yet by either the Erie or Philadelphia & Reading railroad companies against the large lists which they have issued recently. We understand that the Erie Company has augmented the original list by issuing specifications for a number of additional small and medium sized tools.

Following upon the placing of their orders for between

Following upon the placing of their orders for between \$150,000 and \$160,000 worth of machine tools, including driving wheel lathes, axle lathes, car wheel borers, steam hammers, large and small engine lathes, a very large quanhammers, large and small engine lathes, a very large quantity of punching and shearing machinery, radial drills, shapers, bolt cutters, brass lathes, grinding machinery, planers, steel tired wheel lathes, slotting machines, vertical and horizontal boring machines, centering machines, a full line of tool room tools and milling machines, and a large assortment of wood working machinery, to Manning, Maxwell & Moore, the Illinois Central Railroad Company has just placed an order with the same firm for the electric traveling cranes. order with the same firm for the electric traveling cranes required in connection with the general improvements to

required in connection with the general improvements to be made in the shop system throughout the line.

The Central Railroad Company of New Jersey has just placed an order for a large number of radial drills, engine lathes, grinders and wood working tools intended for their shops at Elizabethport, N. J., and other points, with Manning, Maxwell & Moore, who have also secured through their Chicago branch several orders for an assortment of machine tools going to some of the Western railroads, consisting of a general line of railroad tools, such as engine

lathes, radial drills, shapers, grinders and wood working tools. This firm also reports having secured quite a large order from one of the Government power depots, consisting of engine lathes, shapers, radial drills, grinders, &c.

Between \$100,000 and \$150,000 will be spent by the Standard Roller Bearing Company, Philadelphia, Pa., for equipping the large additions to its plant mentioned in these columns, last week. The specifications have not been com-

columns last week. The specifications have not been com-pleted to the point where the company can state its exact requirements in the way of mechanical equipment, but we are informed that the machinery to be purchased will probably include a large number of automatic machines, a few lathes, milling machines and some semiautomatic or hand screw machines. Some of the other machinery not mentioned here has been contracted for. The buildings for which this equipment is to be purchased consist of a 250foot addition to the machine shops and an addition to the ball plant, 50×125 feet.

Notice is being sent to its customers by the Builders' Iron Notice is being sent to its customers by the Builders' Iron Foundry, Providence, R. I., requesting them to anticipate their wants as much as possible, to avoid delays, as its shops will be closed from August 20 to 29 for stock taking and general repairs. The office will be open as usual, and orders for catalogue goods from stock will be filled.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until August 9, for the following machine tools for the Portsmouth, Boston, New York and League Island navy yards:

Class 1, one electrically driven, new model, 14-inch gibbed carriage engine lathe with 6-foot bed.

Class 2, one four-roll singled surface planer, electrically driven, to dress up to 24 x 10 inches.

driven, to dress up to 24 x 10 inches. Class 3, one four-roll single surface planer, electrically

Class 4, one six-roll double surface planer, electrically driven, to dress up to 24 x 10 inches.

Class 4, one six-roll double surface planing machine, electrically driven, to dress two sides up to 30 x 10 inches.

Class 5, one 30-inch automatic knife grinding machine, electrically driven.

Class 6, one 30-inch automatic knife grinding machine, electrically driven.

Class 7, one electrically driven grinding and polishing machine.

Class 8, one 13 x 8 inch outside molding machine, electrically driven.
Class 9, one 9 x 4 inch triple column outside molding

machine, electrically driven. Class 10, one heavy power feed cut-off saw, electrically

driven.
Class 11, one 4-inch, new pattern, combination saw and

Class 12, one 20-inch cut off sawing machine, electrically

Class 13, one 13-inch chain saw mortising machine, electrically driven.

Class 14, one 16-inch cut off sawing machine, electrically driven.

Class 15, one new automatic saw setting machine.

Class 16, one perfect knife balancing machine, one com-bination adjustable saw set, one new automatic saw setting

machine, one improved matcher cutter setter.

Class 17, one hydraulic beam and angle bending machine, capable of bending any size beams up to 12 inches in depth. Class 18, one motor driven vertical drilling machine, capacity 1%-inch hole in 22-inch circle.

Class 19, one motor driven wood boring machine, com-bination, vertical and horizontal spindles, capacity up to

Class 20, one motor driven tenoning machine.

Class 21, one motor driven automatic plug machine, capacity up to 1½ inches.

Class 22, 20 vertical, single, double acting feed pumps for

steam cutters.
Class 23, six 7 x 10 inch single drum steam winches,

with brass link reversing engines

Class 24, one steam and hand steering engine.
Class 25, one 12 x 12 inch warping engine.
Class 26, one four-wheel saddle tank switching locomotive, with cylinders 12 x 16 inches and 32-inch drivers.

Class 27, one dust collecting system.

Proposals will be opened at the Bureau of Supplies and Accounts, Navy Department, Washington, on August 23, for a quantity of machine tools for the Mare Island and Puget Sound yards, including lathes, grinders, drill presses. drills, saws, planers, cutters, riveters, punches, retoothing machine, centering machine, hair picking machine, saw stretcher, sandpapering machine, box pressing machine. screw machine, steam hammer, electric motors, saw filing outfit, &c.

outh, &c.

The following bids were opened at the Bureau of Yards and Docks, July 9, for furnishing and installing two 750-kw. steam turbo-generator units at the Navy Yard, Boston.

Warren Electric Mfg. Company, Sandusky, Ohio, \$47,-

Westinghouse Machine Company, Boston, Mass., \$56,400; alternate, \$48,350.

New York.

NEW YORK, July 20, 1904.

Pig Iron.-New York selling interests have placed quite a large tonnage of Northern Iron, principally of Forge and Basic Pig Iron, Cast Iron Pipe makers being among the buyers. In the aggregate this has footed up to fully 17,000 tons. One of the leading Southern interests which has been quite active in this market for the past three or four weeks selling on the basis of \$9.25 for No. 2, at Birmingham, has now withdrawn from the market. We quote for Northern brands, at tidewater, \$14.75 to \$15 for No. 1 Foundry, \$14 to \$14.50 for No. 2 Foundry and \$13 to \$13.25 for Gray \$14 to \$14.50 for No. 2 Foundry and \$13 to \$13.25 for Gray Forge. Tennessee and Alabama brands are \$13 to \$13.50 for No. 2 Foundry and \$12.50 to \$12.75 for No. 3 Foundry.

Steel Rails.—No official confirmation can be obtained of the reports of considerable sales of Steel Rails by Pittsburgh and Chicago mills. For a long time no sales of any consequence have been reported at the daily meetings of the Rail sales agents at the office of the commissioner, but this is not conclusive proof because the reports of sales seem to be often held up for a long time. There are again reports of sales at very low prices for export. Some good tonnage has been placed in Light Rails, which we continue to quote \$21.50 to \$23.50, tidewater. Standard Rails are quoted \$28, delivered, freights being equalized.

Cast Iron Pipe.—Inquiries are improving, not only from old and well established sources of business but in important instances from unexpected quarters. Eastern foundrymen therefore, talk more cheerfully of current conditions as well as of prospects. If the extensive high pressure fire protection system for this city should soon be put under contract, which now seems quite probable, matters in the Pipe trade will be helped very materially. Carload lots are quotable at \$25.50 per gross ton for 6 to 10 inch and \$25 for 12 inch at tiderates. for 12-inch, at tidewater.

Finished Iron and Steel.—A more cheerful feeling is served in the Structural trade. The opinion is generally observed in the Structural trade. The opinion is generally entertained that the corner has been turned and that from this time a steadily improving business is to be expected. Inquiries are increasing, and estimating departments have seldom been so crowded as at present. Considerable Government and municipal work is coming forward, and even railroad engineers are talking more encouragingly of the prospects of their companies authorizing the undertaking of improvements which have been deferred. The most important local piece of work placed under contract the past week was the Kent avenue power house in Brooklyn, which will require 2700 tons of Steel. Considerable additional tonnage has practically been placed, but is not quite ready for announcement. Plates are quiet, but the termination of the boilermakers' strike, now in sight, is expected to result in a revived demand for this class of material. Bar Iron has not shown much improvement in actual orders, but the inquiry is considerably better and more business is confidently expected. We quote, at tidewater, as follows: Beams, Channels, Angles and Zees, 1.74½c. to 2c.; Tees, 1.79½c. to 2c.; Bulb Angles and Deck Beams, 1.84½c. to 2.05c. Sheared Plates in carload lots are 1.74½c. to 1.85c. for Tank, 1.84½c. to 2c. for Flange, 1.94½c. to 2.10c. for Marine and 1.94½c. to 2.50c. for Fire Box, according to specifications. Refined Bar Iron, 1.44½c. to 1.49½c.; Soft Steel Bars, 1.49½c.

Old Material.-Some little buying movement has made its appearance, but the volume has not been large. Among the sales was one lot of 300 tons of Stove Plate at last week's quotations. Wrought Scrap is in better demand, Steel Scrap is moving to some extent and even Cast Scrap is no longer neglected. While transactions are not large, is no longer neglected. While transactions are not large, they have served to encourage the dealers and prices have advanced to conform to their improved expectations. More business has latterly been done in exporting Old Material, the movement covering moderate quantities of Steel Melting Scrap, Old Iron Rails and Old Steel Rails. Old Car Wheels are very quiet, being almost unsalable. Quotations per are very quiet, being almost unsalable. are very quiet, being almost unsalable. Quotations per gross ton, New York and vicinity, are approximately as

0	I Iron Rails	 	\$14.50 to	\$15.00
0	Steel Rails, long lengths	 	12.50 to	13.00
	I Steel Rails, short pieces	 	10.50 to	11.00
R	laying Rails	 	16.00 to	17.00
0	Car Wheels	 	10.00 to	11.00
	l Iron Car Axles		15.50 to	16.00
	I Steel Car Axles		14.00 to	14.50
H	avy Melting Steel Scrap	 	10.50 to	11.00
N	. 1 Railroad Wrought Scrap	 	12.00 to	12.50
Ir	n Track Scrap	 	11.00 to	11.50
11.	ought Pipe	 	7.50 to	8.00
0	dinary Light Iron	 	4.50 to	5.00
Ci	st Borings	 	4.00 to	4.50
M	ought Turnings	 	6.00 to	6.50
N	1 Machinery Cast	 	10.50 to	11.00
St	ve Plate	 	8.00 to	8.50

A plan is being worked out to bring into one syndicate the three separate organizations in the German wire trade-viz., the wire rod syndicate, the drawn wire pool and the wire nail syndicate.

Metal Market.

NEW YORK, July 20, 1904.

Pig Tin .- Prices fluctuated considerably throughout the entire week, but the net results showed a steady creeping up of prices. The movement came by way of London and here values were simply kept abreast with the figures cabled daily. of prices. While the constant uncertainty of the situation created considerable inquiry on the part of consumers, the actual sales during the week were not large. At the close to-day the following prices prevailed, the market holding fairly steady: Spot and July, 26.40c. to 26.50c.; August, 26.30c. to 26.50c. There were sales of spot at 26.40c. The London market at the close to-day was cabled as being £120 for spot and £120 12s. 6d. for futures. The arrivals this month now amount to 1893 tons and 2104 tons are afloat.

Copper.—The market is quiet and steady at unchanged General conditions are also unchanged, demand for home consumption continuing on a small basis. Prices are quoted as follows: Lake, 12.62½c. to 12.87½c.; Electrolytic, 12.50c. to 12.75c.; Casting, 12.37½c. to 12.50c. The London market is a shade higher, with the following figures: Spot, £57 11s. 3d.; futures, £57 10s.; Best Selected, £61 5s. Exports thus far this month make a large showing, amounting to 11,000 tons.

Pig Lead.—Prices for spot, ex-store here, are a little ner than those of last week, and St. Louis has declined the children of the London market also shows an advance. Spot singnty. The London market also shows an advance. Spot is quoted here at 4.30c. to 4.35c., while St. Louis telegraphs 4.12½c. to 4.15c. The prices of the American Smelting & Refining Company remain unchanged, being on a basis of 4.20c. for Desilverized in 50-ton lots, 30 days' shipment. London cables name £11 13s. 9d.

Spelter.-The market is quiet and without change. Business is rather slow and prices are easy. Spot and July are quoted here 4.85c. to 4.95c. St. Louis quotes 4.77½c., and London remains unchanged at £22 2s. 6d.

Antimony.—The market is easy and unchanged. Hallett's is quoted at 7.25c., while Cookson's is 7c. to 7.25c., and other brands are quoted 6c. to 6.25c.

Nickel.—The usual amount of business is passing and prices are firm, large lots being quoted at 40c. to 45c. and

smaller quantities at 50c. to 60c.

Quicksilver.—The market is quiet and lower, with ample stocks and a demand of moderate proportions. Flasks of 761/2 lbs. have declined to \$42.50. The London price has declined to £7 17s. 6d.

Tin Plate.—The market is unchanged, with a fair demand reported. Quotations are very firm, on the basis of \$3.45 per box for 14 x 20 100-lb. Cokes, f.o.b. mill, equivalent to \$3.64, New York. The Welsh market is unchanged at 11 shillings 1½ pence, f.o.b. Swansea.

The Lanyon Zinc Company has increased its base price of Sheet Zinc 10c. per 100 lbs., which makes the base price

The Pittsburgh Seamless Tube Company.—The Pittsburgh Seamless Tube Company, an identified interest of the Pittsburgh Steel Company has broken ground at Monessen, Pa., for the building of a large seamless tube plant. George Nash, superintendent of the rod and wire mills of the Pittsburgh Steel Company, at Monessen, will also be superintendent of the Pittsburgh Seamless Tube Company, and states that the new plant will be built in sections, the first of which will be for the manufacture of seamless tubes up to 41/2 inches in diameter. section will be completed and put in operation, after which the second section will be started for turning out When these two tubes 41/2 inches in size and larger. sections have been finished, a third will follow, thus forming a chain of continuous plants for the manufacture of seamless tubes, which will be under one roof. Work on the building of this plant will be pushed as fast as possible.

The officers of Joseph T. Ryerson & Son, iron merchants, Chicago, are as follows: Edward L. Ryerson, president and treasurer; Clyde M. Carr, vice-president and secretary; Louis M. Henoch, general sales agent. The late Herman B. Butler was vice-president and treasurer, and shortly after his death Mr. Carr, who was then secretary, was also made vice-president, Mr. Ryerson adding the duties of treasurer to those of the presidency.

The Oil Well Supply Company of Pittsburgh has secured a large order for oil well supplies, for shipment to the Dutch East Indies, and is figuring on a large contract for shipment to Mexico.

Iron and Industrial Stocks.

The stock market was quite uniformly strong during the whole of the past week. Higher prices were scored in almost every active stock. In some instances fortunate purchasers at lower prices took their profits, which resulted in some recession from the highest prices of the week, but almost invariably the net result of the week's operations showed a distinct advance in values. A peculiar feature of the present stock movement is the utter ignoring of unfavorable influences, which would ordinarily cause a weakening of the operations for an advance. To use the language of stock brokers' reports, a subtle influence is operating for the maintenance of prices. It remains to be seen how much higher these prices will go if general trade conditions do not speedily show a material improvement. Notable advances in the list were as follows: Can common 4½ to 4¾, preferred 41½ to 43½; Car and Foundry common 17½ to 18½, preferred 77 to 79; Locomotive common 20½ to 23½, preferred 84 to 88; Steel Foundries common 4½ to 7; Colorado ferred 84 to 88; Steel Foundries common 4½ to 7; Colorado Fuel 31 to 35; Pressed Steel common 32¼ to 34, preferred 74½ to 76¾; Republic preferred 42½ to 44½; Tennessee Coal 38½ to 40¼; United States Cast Iron Pipe preferred 48 to 49¾; United States Steel common 11¾ to 12½, preferred 60½ to 63, new 5's 78¾ to 79½. Last transactions on active stocks up to 1.30 Wednesday were as follows: Can preferred 44; Car and Foundry common 18½, preferred 78½; Locomotive common 22½, preferred 87½; Colorado Fuel 34¾; Pressed Steel common 33½, preferred 76½; Railway Spring common 20; Republic common 7¾, preferred 43½; Sloss-Sheffield common 37½, preferred 85; Tennessee Coal 40½; United States Steel common 12¾, preferred 62¾; new 5's 79¼. Coal 40½; U new 5's 79¼.

In explanation of their action in passing the preferred dividend, the directors of the Monongahela River & Consolidated Coal & Coke Company, Pittsburgh, have issued a statement, in which they say that while the net earnings of the company have been more than sufficient to cover all fixed charges and the losses caused by the unprecedented weather conditions last winter and spring, they do not war-rant the declaration of a dividend at this time. The question of dividing the net earnings of the company to the preferred shareholders is therefore deferred until they are accurately ascertained at the close of the fiscal year namely, October 31, 1904.

Dividends.-The Star Enameling & Stamping Company, Pittsburgh, has declared the regular quarterly dividend of

3 per cent. Tennessee Coal, Iron & Railroad Company has declared a quarterly dividend of 2 per cent. on the preferred stock, payable August 1.

National Steel & Wire Company, New Haven, Conn., has declared a regular quarterly dividend of 1% per cent. on

its preferred stock.

New Power Canal at Niagara Falls.-A new power canal enterprise on the Niagara frontier, involving an expenditure of \$10,000,000, was put under way this week by the Niagara County Irrigation & Water Supply Company. A map filed in the county clerk's office of Niagara County on July 18 shows the route of the canal, which will be 120 feet wide, 20 feet deep and 37,500 feet long, extending from the Niagara River at La Salle, around the city of Niagara Falls, to Devil's Hole, a natural embouchment in the wall of the gorge just below the whirlpool, and where there is a sheer drop of 300 feet from the brink of the precipice. At this point a power house and generating plant will be constructed, capable of generating 150,-000 horse-power. The generators will be located at the bottom of a huge penstock 300 feet in hight, giving a greater drop to the water flowing on to the turbines than in any other Niagara power company, the distance of the drop to the turbine in the tunnel at the power house of the Niagara Falls Power Company, located above the falls, being only 140 feet. Charles B. Wortham of Buffalo is president of the company, which is being financed by Eastern capitalists, and Col. M. H. Alberger of New York City is chief engineer. The charter controlled by the company, and which is very broad and comprehensive in its character, was granted in 1891, and has been kept valid since that date, the incorporators having expended over \$700,000 in excavations at La Salle and in the purchase of property. Condemnation proceedings have been commenced for the remainder of the land required, and it is stated that active work will be proceeded with at

The New Chicago Pumps .- The installation of the first of the three 25,000,000-gallon pumps at the Chicago avenue pumping station, Chicago, has just been begun by the Allis-Chalmers Company. The work of preparing the foundations for this project was undertaken more than a year ago. It will require about three months to complete the installation, after which a second old engine will be taken down and another new one installed. With the new machinery in operation, the pumping capacity of the station will be 75,000,000 gallons a day, or 30,000,000 gallons greater than its former capac-This station will be one of the most remarkable in the world when completed, and the undertaking is being watched with great interest by both steam and hydraulic engineers. The pumps will be the fastest running ever built for their size. The plunger speed will be very nearly 500 feet per minute, with the engines running at 62 revolutions per minute, 625 degrees at the throttle. The pump is of the Allis-Chalmers Riedler vertical type, each engine having a primary and secondary heater, an independent air pump, oil separator, reheater, steam receiver and other special auxiliaries.

Pittsburgh Steel Car Company. - The Pittsburgh Steel Car Company is in process of organization at Pittsburgh and application has been made for a charter with a capital of \$200,000. The incorporators are Ethan I. Dodds, Herman Gralfs, William M. Robinson and Robert E. Barley. The company will be reorganized, however, after the granting of its charter and other stockholders will appear in the directorate. The new company intends to manufacture steel cars under patents granted to Ethan I. Dodds. It is said these patents are not in any way in conflict with those of the Pressed Steel Car Company or the Standard Steel Car Company. principal advantage claimed for the steel cars to be made by the Pittsburgh Steel Car Company is that they will have a superior dumping arrangement. It is stated that the company has had four sites offered to it, and that the plant will be built within a radius of 15 miles of Pittsburgh. The site which will likely be chosen is on the Monongahela River, a short distance above the Homestead Steel Works, and it is expected that a good part of the plates and other shapes will be secured from the Carnegie Steel Company.

At the conference held last week at Spring Lake, N. J., between members of the Pittsburgh Stock Exchange and the New York Produce Exchange, for the purpose of arranging uniform conditions for transactions in pig iron warrants on the two exchanges, nothing was done. Under the terms of trading on the New York Produce Exchange, pig iron warrants are represented by a single form of certificate, differences in the value of various classes of pig iron to be adjusted by debits or credits on the single certificate. The Pittsburgh plan divides pig iron into six classes, with a separate price for each It was not found practicable to bring the ideas class. of the two exchanges into harmony, and the New York Produce Exchange will handle only the single pig iron certificate, while the Pittsburgh Stock Exchange will continue to divide pig iron warrants into six different classes.

E. F. Du Brul, who resigned from the commissionership of the National Metal Trades Association May 1, has been presented with a handsome loving cup by the members of the Administrative Council, as a token of their esteem and appreciation of his services. It is 10 inches in diameter, 12 inches in hight, beautifully decorated and suitably inscribed.

Aug. F. Wiener, managing director of the New Vanadium alloys, Lombard street, London, has a long letter in the London Engineer descriptive of the uses of steel to which vanadium has been added. The company has a smelting plant for the production of vanadium alloys at Llanelly, Wales.

Arthur Koppel, manufacturer of industrial, narrow and standard gauge railway materials, 66-68 Broad street, New York, has an exhibition of track switches. turntables, cars of various styles, &c., at the St. Louis World's Fair. His exhibit will be found in the building of Mines and Metallurgy, block 20, assignment 10.

PERSONAL.

M. H. Taylor, who represents the W. L. Scott interests in the Pittsburgh Coal Company, has been elected a director of the Monongahela River Consolidated Coal & Coke Company, Pittsburgh, filling a vacancy caused by the death of Henry W. Oliver.

N. L. C. Kackelmacker has been elected president of the Columbus & Hocking Coal & Iron Company, Columbus, Ohio, to succeed A. A. Brownlee. F. M. Cronise has been elected a director.

W. H. Kelly, formerly superintendent of the Buckeye Engine Company, Salem, Ohio, has resigned and has been appointed foreman of the plant of the Youngstown Foundry & Machine Company, Youngstown, Ohio.

Edward St. John, formerly assistant auditor of the Westinghouse Electric & Mfg. Company, at East Pittsburgh, has been appointed assistant treasurer of the company, with headquarters in New York.

William Stoops, formerly assistant superintendent of the North Works of the Carnegie Steel Company, at Sharon, Pa., has resigned to accept the position of manager of the works of the Buffalo Steam Pump Company, Buffalo, New York.

W. F. Warden, president and general manager of the Burt Mfg. Company, Akron, Ohio, has just returned from an extended business and pleasure trip abroad, having visited England, France, Germany, Switzerland, Norway, Sweden, Italy and Spain, calling upon the regular agencies of his company, and establishing new ones. While in England, Mr. Warden personally sold one of the large size Cross oil filters to Bryant & May, the English representatives of the Diamond Match Company, and secured an order from his British agents for 150 oil filters and exhaust heads, which is the largest single order for goods of this kind that has ever been given.

J. Morton Fitzgerald of Catasauqua, Pa., has resigned as secretary of the Empire Steel & Iron Company to associate himself with B. Nicoll & Co., iron merchants, New York.

D. D. Lewis has been again appointed superintendent of the rail mill of the Lake Superior Corporation, formerly the Consolidated Lake Superior Company.

Dr. Schuyler Skaats Wheeler, president of Crocker-Wheeler Company, electrical manufacturers, Ampere, N. J., sailed for Europe July 13 on the White Star liner "Baltic." It is stated that he had planned a coaching trip in England, but early this spring Dr. Wheeler went on an automobile tour through the south of France and returned with the American patent rights of the great electrical firm, Brown, Boveri & Cie., Baden, Switzerland. His holiday trips are evidently productive of more than mere personal enjoyment.

Lyman B. Brainerd has been elected president of the Hartford Steam Boller Inspection & Insurance Company, Hartford, Conn., to succeed the late J. M. Allen.

Louis Terven has been appointed chief electrician of the Nernst Lamp Company, Pittsburgh, Pa. Mr. Terven was for some time electrician of the United States Navy Yard, Port Royal, S. C., which position he resigned to enter the experimental laboratory of the Nernst Lamp Company. Later he was given charge of the chemical engineering department of the company.

M. McMurray, formerly superintendent of the Shoen-berger blast furnaces, Pittsburgh, and the Cleveland blast furnaces of the American Steel & Wire Company, has resigned, to accept the position of superintendent of the blast furnace of the Cleveland Furnace Company, Cleveland, Ohio. J. W. Carpenter, who has been assistant superintendent of the Shoenberger furnaces, has been made general superintendent of the Shoenberger and Cleveland furnaces.

John A. Topping, recently elected president of the American Sheet & Tin Plate Company, to succeed W. T. Graham, resigned, has taken charge of the duties of his office and is located in the Frick Building, Pittsburgh.

Thomas Morrison of Pittsburgh is to succeed Charles M. Schwab as a director of the United States Steel Corporation. Mr. Morrison for many years was superintendent of the Edgar Thomson Steel Works of the Carnegie Steel Company, but has not been in active business for some time.

Dr. Elmer E. Brown of E. E. Brown & Co., Philadelphia, Pa., sailed on the 16th ult. on the "Friesland" for a two months' trip abroad, touring England and the Continent.

Chicago Striking Machinists Practically Defeated.

An indication of the status of the machinists' strike in Chicago is given in the following letter, mailed July 16 to Chicago members of the National Metal Trades Association by W. P. Eagan, the new commissioner of that body:

It has been conclusively demonstrated that the strike declared by the International Association of Machinists against certain shops of our members will result in an overwhelming victory for the employers and will bring about a complete removal of the many limitations which have been placed on production in the machine shops of Chicago. You have been working under greater handicap than similar shops in any city in the United States. The unions have forced on you many conditions which tend to minimize the production per operative, and have at the same time resisted all attempts to introduce systems of compensation that would enable a superior workman to profit by his ability.

profit by his ability.

The minimum wage scale, the classification of machinists, the limitation of apprentices, the inability to have one man operate more than one machine have all prevented the securing of the maximum output from your shop. With these restrictions removed, the machine shops in Chicago can be placed upon the same high class of efficiency as those in other cities.

the same high class of efficiency as those in other cities.

It is the writer's firm belief that the machine shops of Chicago, taken as an average, are far behind those of any other rachinery center in the country, and this difference is unquestionably due directly to the influence of the International Association of Machinists.

It is of the utmost importance, therefore, that you take advantage to the fullest extent of the removal of these restrictions. It is earnestly hoped that these facts will be thoroughly impressed upon every superintendent and foreman in the city, and that the result will be the raising of the standard of efficiency of machine shops in this city to a point where competition with institutions of similar character in other localities will be more nearly equal.

Paul Biatchford, secretary of the Chicago Metal Trades Association, states that 65 or 70 per cent. of the complement of men is now employed by Chicago machine shops affected by the strike, and that deserters from the ranks of the union are daily coming in and applying for their old positions, the deserters being for the most part men of a high degree of skill and men of family, who are not in sympathy with the union idea and were forced into the unions in times gone by. A feature of the present situation is the fact that, working on individual contracts, the new machinists are developing a much higher degree of personal efficiency than was possible under union domination, in some cases turning out fully double the amount of work on the piece work basis that the union had permitted men to perform when the shops were subjected to union rule. While there has been considerable violence, it has been reduced to the minimum by the watchfulness of the special police employed by the Metal Trades Association, and has also been deterred by the prompt prosecution of intimidators arrested during the progress of the strike.

The Bi-monthly Wage Conference.—Committees of the Amalgamated Association and officials of the Republic Iron & Steel Company met last week in the Frick Building, Pittsburgh, to adjust the puddling and finishing rates for July and August. It was found that the average price of iron bars shipped out in May and June was .34 cents. As a result puddlers will continue working on a 1.3 cent basis, or at \$5.25 a ton for boiling and \$1.74 a ton for heating. Muck rolling is paid one-eighth the straight price for boiling, which will make the rate a little over 65 cents a ton for July and August.

There is no truth in the report that the works of the Trenton Iron Company, at Trenton, N. J., have been sold or that negotiations for their sale are on. We are officially informed that the plant will continue to be operated as usual, and under the same management.

HARDWARE.

W E recently pointed out some of the many circumstances under which the theory that the manufacturer should sell his goods only to the jobber, who is in turn to distribute them to the retailer, breaks down utterly, as, for example, in the introduction of a new article which neither the jobber nor the retailer is willing to take the trouble to introduce. On account of this disinclination of the natural distributers to find a market for his product the manufacturer has often found it necessary to go directly to the consumer, and thus little by little make a market for his wares and establish a populat call for them, which ultimately justifies first the retailer and later the jobber in taking up their sale. Our reference to this matter has called out the following communication from a prominent Hardware merchant of the West, in which, while expressing his acquiescence in the general principle, he recites an instance in which the manufacturer has pursued a course which makes it undesirable for the merchant to handle his goods. Our correspondent says:

I have been interested in reading the editorials in *The Iron Age* in reference to the theory of the manufacturer, jobber and retail dealer in regard to the introduction of goods, and I think that what you say in this article is logical, provided the manufacturer, in pursuing this method of introducing his goods to the consumer, sells them at a price at which they can be later handled by the trade at a profit.

This morning a gentleman called upon me representing a manufacturer of door hangers. He stated that they had sold same to several of our large factories to be used on fire doors, that the jobbers would not handle these goods and that they were now about to take the matter up with the retail trade, giving them jobbers' prices. He handed me his catalogue together with his price sheet, stating that these were the lowest prices given to the jobbing trade. I asked him what price he was making one of our manufacturing establishments, and he said that he had made them about 15 per cent. better price than quoted to me. I stated to him that I did not see how I would be able to handle his line under the He said that they would simply say circumstances. to this manufacturer that they were selling their goods entirely in this locality through me, and that the manufacturers would have to pay me my price for them. This simply would mean that in order to patronize and give me business the manufacturer must pay me from 25 to 331-3 per cent. more for the goods than he had formerly purchased them for. Until manufacturers of specialties realize that if they expect their goods to be handled by the retail merchants and jobbers they must not sell to the consumer at so low a price that the retailer cannot make money upon the goods, I do not think they have any reason to look forward to our patronage to any considerable extent.

There is force in the point raised by our correspondent. A manufacturer cannot expect Hardware dealers to take up the sale of his goods if he is offering them at as low a price to consumers, and under such circumstances the trade would be justified in refusing to take up their sale. It must be made to the interest of the retailer to handle the goods, or in accordance with the principles of business he will be obliged to let them alone.

The instance cited in the letter must, however, have been quite exceptional, and the manufacturer must have been hard pressed, or overcome by a spasm of generosity, to have offered the goods at 15 per cent. less to the consuming public than to the trade. Assuming that this was his settled policy, he might as well abandon at once

any efforts to have the merchants take hold of them. In the exigencies of business under the necessity of finding a market for their wares manufacturers have been known to make exceedingly low prices to secure the introduction of their products, and even in extreme cases to give away goods for the purpose of making their qualities known. More frequently and under normal conditions a price is made to the consumers which allows retail merchants to handle the goods with profit, and the sale of the goods by the trade is encouraged by suggestions in circulars or otherwise that application be made to the local merchant for the goods in question. Whatever method is adopted, when the goods are offered to the merchant there should be for him an opportunity to make a profit, and he ought to be in a position to sell the goods at at least as low figures as consumers have been quoted by the manufacturers when introducing them.

In this as in a multitude of cases there must be a recognition of the interests and necessities of both parties. The retail merchant must recognize the fact that the manufacturer in finding a market for his products which jobbers and retailers alike refuse to handle may be compelled to go to the consumers, and to press them upon their attention by any means and practically at any price which will induce a purchase and the resultant trial of the new article. This is one of the necessities of the situation. At the same time the manufacturer must recognize the fact that the merchants, wholesale and retail, are conducting business under the pressure of a similar law—they must have trade and profitable trade, a matter in which the policy pursued by the manufacturer has often a good deal to do.

Condition of Trade.

There is a disposition on the part of manufacturers and merchants to take full advantage of the vacation season, and efforts looking to the marketing of goods are generally relaxed even more than usual, and things are permitted to take their regular course without too much pressure in the marketing or the production of goods. The present month has the reputation of being the quietest of the 12 and shows no disposition this year to take place among those characterized by a heavy volume of business and the stress of commercial activity. Manufacturers and merchants of extensive interests are generally in a waiting attitude, feeling that nothing is to be gained by forcing business, and continue to watch the general improvement in tone and the more confident expectations which are taking possession of the trade. Fortunately the general conditions continue to be indicative of at least a fair trade this fall, while there seems to be no reason to apprehend anything like a serious depression in the near future. There is consequently a looking forward to a healthful if not specially heavy business during the remainder of the year. To this hopeful feeling the promise of the crops, the large and regular outward movement of products, the generally prosperous conditions which prevail throughout the country and the steadiness of values in iron and its manufactures notwithstanding some concessions in price, all contribute.

Chicago

(By Telegraph.)

Business is good and there is every prospect that July sales will compare favorably with the corresponding months of last year. A shortage in Screen Cloth is not helped at all by a newspaper story to the effect that the Panama Canal Commission will buy a very large quan-

tity. Fall trade is picking up nicely. A slight additional differential, however, is given to jobbers, and this prevents them from making an actual loss on their sales. Demand for Wire and Cut Nails and for Wire products is very light just now with mills, and the jobbing trade, as retailers, have bought their season's supply, and have not sufficiently exhausted them to necessitate reordering in any quantity. Official prices are being shaded very generally by both the leading producer and independents.

Cleveland.

THE W. BINGHAM COMPANY.-Large crops are considered a good barometer for trade, and if the immense crops of corn and wheat that are indicated by present conditions materialize, we shall certainly have a flourishing trade this fall. Many orders are coming to us by mail at the present time, perhaps on account of the salesmen being off on their vacation, and the trade generally seems to be having a very good business during the summer months. There is no particular rush in any special line, but the orders are for general assortments. men who have been in report that customers are not overstocked with goods, and money seems to be reasonably plentiful. There is a steady, healthy trade going on all We do not expect any great amount of business until about the middle of August or September 1. The indications are that we shall then be very busy. Customers and salesmen will have returned from their vacations and business ought to begin with a vim and

Prices are steady and firm. There is no intimation of any radical changes. Nails and Wire are going forward steadily in a moderate way. Manufacturers are not disposed to pile up stock, so that when the trade does open up in full blast, there will be no necessity of sacrificing prices to make sales on account of overstocks.

Politics so far do not seem to cut any figure with trade, and if the thought of it could be divorced entirely from business, it would eliminate a subject that crokers harp upon. Politics and business do not mix well. From our way of thinking, there is no reason why we should not go into the fall trade with a feeling that the business is well deserved and is going to last through the year.

St. Paul.

FARWELL, OZMUN, KIBK & Co.—The midsummer trade has run about as expected, under normal conditions. The demand for seasonable goods has been fair and has extended through all the lines. Crop conditions, as the season has advanced, have affected trade to some extent, but although crop prospects all along have been favorable, yet the general feeling has been adverse to doing a large credit business until the harvest was assured. Retail merchants in large sections of the country have not given credit freely and their present outstanding accounts on the current year's business are less than usual at this We have now reached the critical period and the next fortnight will determine largely what the outcome of the wheat crop is to be. At this writing the conditions are favorable for more than an average yield. If this be the result the fall trade will be large. Stocks in the retailers' hands are low and the demands on jobbers are likely to be heavy.

The trade are watching closely the progress of the catalogue house discussion. There has been a good deal of "playing to the galleries" manifest, and evident desire on the part of some houses to square themselves on this subject with their customers, while, on the other hand, silence has been observed by houses, such as those of the Northwest, that have refused for the past dozen years to sell a dollar's worth of goods to any catalogue house. The important question now is, however, not what the past history of any house on this subject may have been, nor is it entirely as to what professions are now made. Professions are easy and cheap and often amount to but little. The vital question is how much real hard work and sacrifice are the wholesale and retail trade willing and determined to put into this effort. On this point the solution of the problem mainly depends. All the evils of the catalogue house cannot be removed, but many of the more grievous ones can be and will be if the Hardware trade push the work with all the means at their command. This will require "a long pull, a strong pull and a pull all together," in order to win out, and we wish to add our firm conviction that not only the logical but the necessary way to conduct this work is through the respective Hardware associations. No retailer can expect to reach any effective results alone, and the value of the work done by the jobbers will be measured mainly by the strength of their organized methods and by the loyalty of the members of the National Hardware Association.

Portland, Oregon.

Corbett, Failing & Robertson.—The cognomen, "Webfoot," will have to pass on to Alaska or some other section if we do not shortly have rain, as our webs will be so cracked they will be of no further use. Western Oregon and Washington have never experienced so little rainfall as this year, with 1.18 inches in May, 0.45 inch in June, and not a drop in July. On the other hand, the arid and dry sections of Eastern Oregon and Washington have been treated to downpours of late that are unusual in those sections; consequently there is a wide difference in the crop prospects of the two sections.

Oregon, Washington and Idaho are expected to turn off 50,000,000 bushels of wheat this year, as against 33,000,000 last year. If this promise of a big wheat yield is fulfilled, following the high price paid for wool this spring, the highest in years, Eastern Oregon and Washington should have their full measure of prosperity meted out to them this fall. On the other hand, there are two drawbacks to offset above fine prospects; one is the low price and lack of demand for cattle at any price, and the depression in the lumber business, that grows worse rather than better.

Business shows little or no change from conditions heretofore reported. It might be a whole lot worse, and we all could stand an improvement without growling that we had too much to do.

Omaha.

LEE-GLASS-ANDREESEN HARDWARE COMPANY .- The general business situation is easily described by stating that this is the dull season of the year, and every one readily understands what that means. The yield of small grains now being harvested is very large, and the quality well up to the average. The weather recently has been about all that could be desired, with the exception of a superabundance of moisture, which has somewhat retarded the growth and ripening, as far as the low or bottom lands are concerned. Corn, the main crop in this section, and upon which everything seems to hinge, has made a fine growth. It is of excellent color and in a very healthy condition at the present time. There seems to be hardly any doubt among producers that a heavy crop of corn will be harvested. With a good corn crop almost assured, business men in all lines are not worrying about the outcome of the fall and winter trade, as it will take something besides the uncertainty of a Presidential election to stop a free movement of merchandise with a heavy yield of corn in the farmers' hands.

Philadelphia.

Supplee Hardware Company.—Very little change has taken place in jobbing circles, and we might add practically in retail circles, since our letter of July 5. The inertia which was then spoken of still continues, as it is likely to do until July is past. Everything remains very quiet. The vacation period spoken of in that letter still continues, consequently we cannot embrace anything in this letter which may be of interest or new to the trade in general. Salesmen all report, however, that prospects are fair for the coming fall, and very little fear exists throughout the country that the Presidential campaign will have any harmful effect upon trade.

Nashville.

GRAY & DUDLEY HARDWARE COMPANY.—The Hardware business in this section continues very satisfactory, although some of the salesmen are still taking their vacations. The balance who are on the road are having a

good trade. The orders taken are well assorted and for very nice quantities, and the prices as a rule are acceptable.

The crop conditions are still very fine. Wheat, corn and cotton are all doing remarkably well, and everything indicates that the summer and fall business will be equally as large, if not ahead, of last year. Collections at present are a little bit light.

St. Louis.

Nobvell-Shapleigh Hardware Company.—Fine, hot growing weather for corn. Business is affected by vacations and regular duties are interrupted by visiting merchants and manufacturers, who are taking in the World's Fair in large numbers. The majority of merchants and salesmen predict a very satisfactory fall business. Collections are good.

NOTES ON PRICES.

Wire Nails.—The irregularity in prices which frequently characterizes the market when stocks at the mills are large and demand is light appears to be very general at the present time. The policy of manufacturers seems to be to secure business, though no change has been made in the regular quotations, which are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, c	arload lo	ots		 	 	 	 .\$1.90
Retailers,	carload	lots		 	 	 	 . 1.95
Retailers,	less than	n carload	lots	 	 	 	 . 2.05

New York.—Demand keeps up to the midsummer volume, which is moderate. Quotations are as follows: Single carloads, \$2.10; small lots from store, \$2.20.

Chicago, by Telegraph.—Business is quiet, as it naturally is this month, and prices are being shaded very generally. One Cincinnati broker sent out a general lecter to the retail Hardware trade offering Wire Nails on the basis of \$2, Chicago, in less than carload lots. Jobbers are buying at prices considerably below this figure. Official prices remain unchanged, as follows, f.o.b. Chicago: Jobbers, carload lots, \$2.05; retailers, car lots, \$2.10; retailers, less than car lots, \$2.20, though these prices are being shaded by independents and met when necessary. Coated Nails are quoted at \$1.60 to \$1.65 per keg to dealers or large consumers, delivered, Chicago.

Pittsburgh.—Demand is light, and as the mills are all anxious for business there is considerable unevenness in prices. Stocks held by the mills are heavy, and an official reduction in prices is still expected by the trade. While we have made no change in quotations, it should be noted that our prices are more or less shaded, depending on the order and point of shipment. We quote: Wire Nails, \$1.90 in carloads to jobbers, \$1.95 in carloads to retailers and \$2 to \$2.05 in small lots to retailers, all f.o.b. Pittsburgh, 60 days or 2 per cent. off for cash in 10 days, plus freight to point of delivery.

Cut Nails.—Larger stocks at mill than present demand requires and a desire to reduce the accumulation have resulted in brisk competition and an irregular market. A shading of 5 to 10 cents from the following quotations is more or less general. Regular quotations are as follows for Steel and Iron Nails, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers.	carload lots\$	ase.
Jobbers.	less than carloads	1.80
	less than carloads	

New York.—A steady but limited demand characterizes the market at this point, at the following quotations: Carloads on dock, \$1.89½; less than carloads on dock, \$1.97½; small lots from store, \$2.05.

Chicago, by Telegraph.—The reaffirmation of the Cut Nail schedule has made no difference whatever in the cutting of prices in this market, \$1.80 to \$1.85 being the open prices in carload lots, and about 5 cents higher where they can get it for less than car lots.

Pittsburgh.—New demand for Cut Nails is dull and stocks held by the mills are heavier than for some time. Competition is keen for what business is coming up, and prices are more or less shaded. We quote Steel and

Iron Cut Nails at \$1.65 to \$1.75, base, in carloads, maker's mill. Less than carloads are \$1.70 to \$1.75, terms 60 days, less 2 per cent. in 10 days.

Barb Wire. — The amount of new business being placed is light, and prices depend upon the desirability of the order. The result is that concessions from regular quotations are quite freely made. Quotations in general are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Galv.
Jobbers, carload lots	\$2.20	\$2.50
Retailers, carload lots		2.55
Retailers, less than carload lots		2.65

Chicago, by Telegraph.—The official prices named below may be taken only as a guide to what the mills would like to get rather than the prices they are actually getting, though prices are not being cut very deeply. The official prices are as follows: Car lots to jobbers, Painted Wire, \$2.35; Galvanized, \$2.65. To retailers, car lots, Painted, \$2.40; Galvanized, \$2.70. Retailers, less than car lots, Painted, \$2.50; Galvanized, \$2.80. Staples to retailers, 5 cents higher. These prices are not being maintained absolutely.

Pittsburgh.—There is very little new business being placed, and as the mills have heavy stocks and are anxious for orders, prices are more or less shaded. We have made no change in quotations, on which concessions are freely made, depending upon desirability of the order. We quote as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

Pain	ted. Galv.
Jobbers, carloads\$2	.20 \$2.50
Retailers, carloads	
Less than carloads 2.	

Smooth Fence Wire.—Ruling conditions in Barb Wire apply to the Smooth Fence Wire market, and irregular quotations are more or less general. Official quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, o	earloads	0		 							0			0	0	D	0	0		.\$1.80
Retailers,	carloads.		0	0	0		0 1			0	0		 0	0	0	0		0		. 1.8
Less than	carloads	 	 	. 0			 	0				 					0	0	0	. 1.93

The above prices are for base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances, as follows:

 6 to 9
 10
 11 12&12½ 13
 14
 15
 16

 Annealed....Base.
 \$0.05
 .10
 .15
 .25
 .35
 .45
 .55

 Galvanized....\$0.30
 .35
 .40
 .45
 .55
 .65
 1.05
 1.15

Chicago, by Telegraph.—Official prices are as follows, f.o.b. Chicago: Smooth Fence Wire, Nos. 6 to 9, \$1.95 per 100 pounds, in carload lots to jobbers; \$2 per 100 pounds to retailers, and \$2.10 in less than car lots. These are not being maintained regularly, but are shaded as occasion demands.

Pittsburgh.—The mills all have heavy stocks, and, being anxious for business, which is light, are shading prices more or less. We quote as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days: Plain Wire, \$1.80, base, for Nos. 6 to 9, in carloads to jobbers, and \$1.95 to \$2 in small lots to retailers; Galvanized, 30 cents extra for Nos. 6 to 14.

Stove Boards.—A paragraph in a recent issue referring to the Stove Board market, in calling attention to some irregularity in prices, should have limited the reference to Paper Lined Embossed Boards, on which some unevenness in quotation prevails on account of the competition of manufacturers outside the association. The prices on the regular lines of Stove Boards made and controlled by the associated manufacturers are referred to as exceptionally well maintained, but on the Paper Lined Embossed lower outside prices are quoted, which, in some cases at least, are met by the associated manufacturers.

Rope.—A somewhat better feeling is expressed by manufacturers as to the probable continuance of the moderate demand for the coming six weeks, with a prospect of larger requirements in the fall. Quotations on the basis of 7-16-inch diameter and larger are about as follows: Pure Manila, 11½ cents per pound; other grades of Manila, 10¼ to 11 cents, according to quality; pure Sisal, 9 cents; mixed Sisal, 7½ cents.

Glass.-There appears, according to reports, to be a tendency on the part of the trade that are purchasing Glass to buy larger than third bracket Glass, which, it is feared by the manufacturers, will leave them with broken stocks and a surplus of small Glass. It is considered probable that demand for sizes above the third bracket will increase from year to year. On account of changed conditions in the first three brackets, brought about by machine made Glass and consequent lower European prices, there seems to be a demand for a change in the manufacturers' list of January 1, 1901. The Producers' Window Glass Company is reported as having stocks of desirable sizes of Glass amounting to about 284,900 boxes, embracing many of the best tank made brands in the country. Stock lists, it is said, are being sent out in smaller numbers than a short time ago, and as being now so broken in assortments as not to be considered as having much effect upon the market.

Oils .- Linseed Oil .- In sympathy with the advance in Flax Seed, city crushers advanced the price of Raw Oil 2 cents per gallon on the 15th inst. Under natural trade conditions, in former years, Oil was expected to weaken in price during the summer period of light demand, and to become stronger during the early fall. Present conditions would appear to point to an arbitrary advance in the price of Seed and Oil by the largest interest. A report is in circulation that the largest producers are not willing to accept orders for delivery more than 30 days in advance. Demand is light and confined mainly to small lots. Quotations are as follows: City Raw, in lots of five barrels or more, 44 cents per gallon; in lots of less than five barrels, 45 cents per gallon; State and Western Raw, 42 to 43 cents per gallon. Boiled Oil, the usual 2 cents advance per gallon over Raw.

Spirits Turpentine.-During the early part of the week under review prices advanced 11/4 cents over our last quotations, with fair demand. Later requirements being lighter, caused prices to decline slightly, with a weaker market. Quotations are as follows in this city, according to quantity: Oil barrels, 561/2 to 57 cents; machine made barrels, 57 to 571/2 cents.

PACIFIC COAST HARDWARE AND METAL ASSOCIATION.

THE ninth annual meeting of the Pacific Coast Hardware and Metal Association took place at the Hotel Potter, Santa Barbara, on July 6, 7 and 8. The various firms comprising the membership of the association were well represented by delegates, many of whom were accompanied by ladies. The meeting occurred immediately after the Fourth of July holidays, and some of the members took advantage of that fact to spend a few extra days at this delightful resort.

At the opening of the discussion it became evident that all of the members are still deeply interested in the work of the organization, fully recognizing its value and efficiency, and prepared to co-operate with its efforts in every way. The convention was pronounced by all who attended it one of the most interesting and helpful meetings which had been held. Most of the topics which were discussed were naturally of interest only to the Hardware jobbing trade, and particularly to the Pacific Coast. Among subjects of general interest, however, which were taken up were the following:

CATALOGUE HOUSES .- In line with the action taken by the National Hardware Association and other organizations on this subject, a resolution was passed to the effect that manufacturers and jobbers be urged to refrain from selling to catalogue houses excepting on the same price basis as to other retail dealers.

INCREASING THE POWERS OF THE INTERSTATE COMMERCE COMMISSION .- Under the present operation of the Interstate Commerce law, an order of the commission has no effect until enforced by the courts. This involves a delay of several years, and in the meantime the railroads may change the rates at their own pleasure, the shipper having no redress except to recommence proceedings. last session of Congress a measure was introduced known

as the Quarles-Cooper bill, which has for its object an increase in the powers of the Interstate Commerce Commission, giving that body power to enforce its own decisions. This bill, if passed, will make it incumbent upon the railroads, instead of the shipper, to appeal to the courts and endure the consequent delay, if they do not wish to comply with any order of the commission. A resolution was passed by the association indorsing the Quarles-Cooper bill, which is believed to be a step in the right direction.

ANTI-PARCELS POST LEGISLATION .- The following resolution was adopted:

Whereas, 'The so-called Parcels Post bills now before Congress are in our opinion opposed to the interests of the mem-bership of our organization and those of the retail trade, particularly the retailers in the smaller cities and towns, inasmuch as they expose such retail merchants to the unfair competition of catalogue houses located from 2000 to 3000 miles away, and would have a tendency to centralize trade in the larger cities;

Resolved, That we are opposed to said bills, or any bill which increases the weight of mailable packages of merchandise; and further

Resolved, That copies of this resolution be forwarded to every United States Senator and Congressman from the Pacific Coast States and further Resolved, That this organization co-operate with the Anti-

Parcels Post League of California in opposing any legislation of the above nature.

UNIFORM THREAD FOR BOLTS AND NUTS.-Recognizing the convenience and desirability of a uniform thread for Bolts and Nuts, a committee was appointed for the purpose of discussing the matter, and, if possible, endeavoring to bring about the adoption by the various manufacturers of such a uniform thread.

Other discussions were held on subjects relating solely to relations among the Coast jobbers, and to the promotion of friendly intercourse with manufacturers.

Hotel Del Monte, Monterey, was chosen as the meeting place for the next annual convention of the association.

At the close of the session the following officers were elected to serve for the ensuing year:

PRESIDENT, Joseph Sloss, Pacific Hardware & Steel Company, San Francisco.

FIRST VICE-PRESIDENT, L. C. Scheller, Union Hardware & Metal Company. Los Angeles

SECOND VICE-PRESIDENT, T. L. Enwright, Miller-Chapin-Enwright Company, Sacramento.

Company, Sacramento.

TREASURER, Ralph W. Kinney, Barker & Kinney, San Francisco.

SECRETARY, Hamilton W. Barrard, San Francisco.

EXECUTIVE COMMITTEE: Wakefield Baker, Baker & Hamilton.

San Francisco; Andrew Carrigan, Dunham, Carrigan & Hayden Company, San Francisco; E. H. Kinney, George H. Tay

Company, San Francisco; William Schaw, Schaw-Batcher

Company, Sacramento; E. W. A. Waterhouse, Waterhouse

& Lester, San Francisco; A. A. Watkins, W. W. Montague

& Co., San Francisco; W. R. Wheeler, Holbrook, Merrill &

Stetson, San Francisco. Stetson, San Francisco.

ADVISORY BOARD: Brace Hayden, Dunham, Carrigan & Hayden Company; H. J. Morton, Pacific Hardware & Steel Company; A. C. Rulofson, Baker & Hamilton, San Francisco.

KNAPP & SPENCER COMPANY'S CATA-LOGUE.

NAPP & SPENCER COMPANY, Sioux City, Iowa, has just issued a loose leaf, illustrated and decriptive catalogue of 1302 pages, devoted to Hardware, Cutlery, Guns, Ammunition and Sporting Goods, Tinners' Stock and Metals. A full page picture of their warehouse and offices appears on the front of the book, followed by an alphabetically arranged index, occupying 39 pages. In the publication of the catalogue the company has endeavored to select only the most representative goods in the respective lines, with the intention to keep, at all times, a complete stock of all the goods illustrated, and to be in a position to serve customers promptly. Additional pages of new goods will be sent to customers from time to time, to be inserted in their proper places. The catalogue is printed on a good quality of paper, the illustrations, descriptions and lists being well arranged, presenting a fully assorted stock in an attractive manner. The company's patrons are to be congratulated upon having so excellent a catalogue in their possession.

THE CATALOGUE HOUSE QUESTION.

THE IRON AGE DIGEST OF PRICES ON GENERAL GOODS.

THE abstract of prices on common Hardware articles which was given in The Iron Age, July 14, has evidently been carefully studied by the trade. It certainly deserves a careful perusal, if only in accordance with the general principle that there is a prime necessity for any one who is selling goods to know the prices as well as the articles with which he is called upon to compete. Until the recent agitation of the subject many retail merchants have been ignorant in regard to catalogue house prices, except as occasionally, perhaps frequently, they have learned incidentally that one of their customers has become a customer of the catalogue house. The digest of prices quoted by one of these houses in our last issue has served to call attention to the kind of competition Hardware merchants are confronted with. should, however, lead to a careful study of the catalogues themselves, as every merchant should have as full and definite information on this subject as possible.

AN INTERESTING AND SUGGESTIVE LETTER FROM A PROMINENT MANUFACTURER.

The following letter is from a well-known manufacturer and is significant as stating his view of the situation, and especially from its enumeration of some of the advantages manufacturers find in dealing with catalogue houses. It is only proper that such considerations should be taken into account by those who take a broad view of the subject under discussion, as nothing is to be gained by ignoring any of the facts in the case. The feeling and attitude of manufacturers certainly have a most important bearing on the policy to be pursued. Our correspondent makes some points which certainly deserve to be taken into serious consideration:

To the Editor:

While we have followed the discussion in your paper with a great deal of interest, and admit the apparent justice of several of the claimed wrongs done by the catalogue houses, we would like to add a few thoughts from the manufacturers' end.

We have received a notice from some members of the retail Hardware associations in various parts of the country, and are told that the catalogue houses are under-

A Gentle jobbing prices at retail on our goods.

Boycott Coupled with these statements are suggestions that if we do not stop selling the offending houses, they (members of the retail associations) will stop selling our goods. This appears to be a gentle form of boycott. Now look at the matter from

our end.

We have been making one article for 50 or more

years. It is the best article of its kind in the market, and admittedly so; even these same

Imitation and people give us credit for that fact. It is so well known that many of our unscrupulous competitors make imitations, and the members of these associations sell the imitation for our goods whenever possible, because that gives them more profit.

Some of them even go so far as to catalogue our goods at "bargain" prices and at discounts longer than the jobbing price, and then put out a substitute.

Now the catalogue house lists our goods and sells them without any substitution. The two large catalogue houses in Chicago (either of them) sell more goods per year than any Hardware jobbing house in the country. They have the confidence of their clientage, and we have never known them to say: "Here is something just as good." We cannot say that either of the jobbers or the retail houses. Of course there are exceptions, but they only prove the rule. If we stop selling the catalogue houses they will sell a substitute, and while they will change in their next catalogue without a doubt, still we lose much by the loss of the specification of our goods in their pages and the listing of another make.

If these retail associations were in a position to assure us that all other makers of goods sold as substitutes

A Uniform
Discount?

for ours would agree and hold to a discount especially for catalogue houses, then we would be foot free and able to meet their demands. As the matter now stands

there are six or seven makers of the same article, and as ours is the highest in price, the rest are gunning for our pelt.

Can the retail association offer any immunity in this line? Can they assure us that if we stop selling the catalogue man they will sell our goods only? Can they promise that for a price agreement against the

catalogue house they will stop substitution

Some by their members? Can they promise that

Questions if such a price agreement is made we
will be able to meet our competitors on the
same footing as now, and not drop for good and all a
large line of good paying accounts?

And by the way, the catalogue houses settle their bills as well as, if not better than, 75 per cent. of the jobbers, let alone the retail trade.

All these things should be answered before the associations pick up the boycott business. So we would like to have the people who propagate these troubles explain how we can get out of this difficulty.

Perhaps it would be well to ask them if they think they can keep all the jobbers from selling catalogue houses. Can they keep the jobbing in-

the Jobbers? this or that line as a flyer at an advance discount? Would a price agreement against the catalogue house assure their not selling

our or other lines of goods that they now catalogue? What is to hinder the catalogue houses from putting up a "flyer" at a long discount, too?

It is easy to write a letter such as these we have received, but there are two ends to every hole. The secretaries of these various associations are certainly earning their money, but there is another side to the matter, and it should be aired as thoroughly as the retail end. The manufacturer takes more risks than any one else, and if there is a loss, he loses most. Why not let him have a chance to say something.

MANUFACTURER.

VIEWS OF R. M. DUDLEY ON CATALOGUE HOUSE COMPETITION.

The trade will be interested in the following suggestions made by R. M. Dudley, president of the Gray & Dudley Hardware Company, Nashville, Tenn., and a prominent member of the Joint Catalogue House Committee. Mr. Dudley's ability and breadth of view give weight to his words, which will be recognized as a conservative, wise and practical statement of the case:

In response to your request to give you some comments on the report of the Wholesale and Retail Catalogue House Committee's work, I wish to say that the press report which was submitted is the sentiment and expression of the committee; for this alone the committee is responsible. It is our platform, on which we propose to make a campaign in the interest of the Hardware trade of the country, and we think it needs no explanation. We expect to pursue a conservative course, and we feel confident that we will receive the support of the

A Conservative We are going to ask for nothing but what is right, and we go into this battle with every hope of success.

We have back of us about 10,000 retail Hardware stores

and about 400 Hardware jobbing houses in the United We believe that we can convince the manufacturers that the nearest, most economical way to reach the consumer is through these jobbers and retailers, and that nothing can do him a greater injury than to destroy this method of distribution.

The catalogue or mail order houses are receiving very special attention at the hands of the Hardware trade at this time. Perhaps no other line of business has suffered so much from catalogue house competition as has the Hardware trade. This is to some extent accounted for by the fact of the catalogue houses being

able to buy so many well established rep-Leaders or utable brands of Hardware, the prices Baits of which are so well known throughout the country. These have invariably been

used as leaders or baits to sell other goods, and usually the other goods, of less reputation, have been sold at a fair margin of profit.

I take the position that the manufacturers of the country and the large jobbers in the great cities are largely responsible for the existence of the catalogue This is true, notwithstanding the fact there are great numbers of manufacturers and jobbers throughout the country who have never sold catalogue houses at all. The manufacturers and large jobbers in the large cities who have encouraged the growth of catalogue

houses have done so because of their Large Orders anxiety to secure very large orders for Responsible goods, the reputations of which were doubtful, without going to the expense

of introducing the goods through the regular channels of trade- namely, the jobber and retailer. We are glad to say that these jobbers, almost without exception, have seen the error of their way and are now enlisted with us in this fight. Many leading manufacturers who have recently made a study of this question have returned to the old method of marketing their product and are refusing the business of catalogue houses, or if they offer them goods at all offer them at regular price to the retail trade. This is a fight in which the manufacturer, jobber and retailer must all bear their portion of the burden. Some manufacturers will, no doubt, be called upon to divert some of the business which is now going to catalogue houses to other channels.

To my friends in the retail trade I recommend that they use every argument and effort to convince their customers that they can buy Hardware as cheaply from their local retail dealer as from the far distant catalogue houses, and when they can make it at all consistent with

business judgment to do so, they should Advice to meet the prices of catalogue houses, adding, of course, the difference in freight to the Retailers customer. They should, under all circum-

stances, present the many arguments in favor of patronizing home people in preference to sending away, not the least of which is that they have an opportunity of examining the goods and know exactly what they are getting, and if anything is wrong it can be rectified without the trouble or expense of returning the goods to a far distant city. Unless the average retail customer of the retail Hardware store is a great deal more particular in making his selections of goods from the catalogue houses than he is from his local dealer, he will be displeased with a great many articles and would prefer to return them for exchange, and would do so were it not for the great expense incident thereto.

To my jobbing friends I recommend that they make concession in prices to as great extent as it is possible

to do so on such goods as are quoted Concessions at low prices by catalogue houses, thus enabling the retailer, where it can be done, to meet this competition, even by Jobbers at a sacrifice of a large part of the profit by both jobber

and retailer.

It will be found that this is not necessary, except on certain brands of goods, for in many cases the prices of the catalogue houses are not low, when the quality of goods is considered and freight to customer is added. It is undoubtedly the duty of the jobber to keep his traveling salesmen thoroughly posted as to the quality and price of goods being quoted by catalogue houses,

Traveling Salesmen Can Help

that the salesmen may be enabled at all times to assist their customers in meeting this competition in an

intelligent way. There is not a more intelligent body of men to-day engaged in any business or profession than the army of traveling men connected with the Hardware trade, and the Wholesale and Retail Catalogue House Committee which has been appointed, with the strong support of the Hardware associations of the country, together with the intelligent efforts of this body of traveling men, has every right to expect success to crown its efforts.

Hardware Mutual Fire Insurance.

T the present time there are eight mutual fire insurance companies which are being conducted indirectly by Hardware associations, and are especially intended for insuring general Hardware stocks, as follows:

THE RETAIL HARDWARE DEALERS' MUTUAL FIRE INSURANCE COMPANY OF MINNESOTA, M. S. Mathews, secretary,

Boston Block, Minneapolis, The Ohio Hardware Dealers' Mutual Fire Insurance COMPANY, Geo. M. Gray, secretary, Coshocton, Ohio. THE NATIONAL HARDWARE MUTUAL FIRE INSURANCE COM-

PANY, W. B. Simpson, secretary, Huntington, Pa. THE HARDWARE DEALERS' MUTUAL FIRE ASSOCIATION OF

PENNSYLVANIA, W. B. Simpson, secretary, Huntingdon, Pa.

THE IOWA HARDWARE DEALERS' MUTUAL INSURANCE AS-

SOCIATION, A. R. Sale, secretary, Mason City, Iowa. The Hardware Dealers' Mutual Fire Insurance Com-PANY OF WISCONSIN, C. A. Peck, secretary, Berlin, Wis.

THE MISSOURI RETAIL HARDWARE DEALERS' TOWN MUTUAL FIRE INSURANCE COMPANY, Fred. Neudorff, secretary, St. Joseph. Mo.

NEBRASKA HARDWARE MUTUAL FIRE INSURANCE COMPANY (organized June 16), F. T. Shepard, secretary, Lincoln. Neb.

Several other State associations have companies in process of formation, and the list will probably be enlarged in the course of a few months.

It may interest Hardware merchants who are canvassing the question as to placing insurance with mutual companies, especially dealers who are affiliated with State Hardware associations, for only one or two of the above companies accept insurance from nonaffiliated merchants, to know something about them, their method of insurance, amount of risk, &c.

The Minnesota Plan.

Of these companies, the oldest, and by far the largest, is that of Minnesota, which is now completing its fifth year of existence. The plan of this company, which is practically the one followed by the others, is to write policies for one year only, at the expiration of which the insured knows to a certainty just the amount of money the mutual plan has saved him and just what his insurance has cost. Each year's business takes care of itself, the return premiums being based upon the losses and expenses incurred during the year. At the expiration of a policy the premium to which the insured is entitled is returned to him if he does not desire to continue another year, or is credited to him on renewal of policy. The rate charged for insurance is the established board rate for the town in which the merchant is located, or if there is none so established, the applicant for insurance is charged the rate any reliable company would ask on the risk. In this way the insured pays no more than he would pay elsewhere, while the return premium at the end of the year puts him that much ahead. The return premium of the Minnesota Association for policies expiring during the present year is 30 per cent., this also permitting a substantial addition to the surplus. The company expects soon to be in a position to furnish insurance at an actual cost of less than 50 per cent, of old line rates.

The other companies, which have all been organized within a year or so, some of them since the beginning of 1904, all follow the same general plan, as already stated. Officered as they are by representative merchants of high standing, there is every reason to suppose that they will duplicate the success of the Minnesota company in furnishing safe insurance at a substantial concession from the usual rate.

The Minnesota company accepts insurance from merchants in any State who are members of their State association (and who, of course, are a "good risk"), nearly 50 per cent. of their business being with dealers outside of Minnesota.

The Ohio company is not prepared to extend the privilege of insurance to Hardware merchants in other States, but it does insure Hardware merchants who are not members of the Ohio State Association.

The National company, as the name implies, insures dealers anywhere who are affiliated with a State association, this company having been organized for this purpose, under the special auspices of the National Retail Hardware Dealers' Association. The limit of insurance is \$3000.

The Pennsylvania company accepts risks in any of the States contiguous to the Keystone State. It has no absolute rule limiting insurance to members of associations, and has accepted a few policies from parties in States where there is no association. The insurance limit is \$3000.

The Iowa company accepts insurance from dealers in adjoining States, and is not yet ready to extend the privilege to others. The limit on a single risk at the present time is \$2000. Where the policy is written for a larger amount the same is covered by reinsurance. It does not carry more than \$3000 in any one block, but this is a matter which again is cared for by reinsurance, where it is necessary to accept the insurance for the convenience of dealers. Dividend No. 1 of this company entitles holders of policies written up to February 15, 1904, to a cash rebate of 20 per cent.

The Wisconsin company insures Hardware dealers anywhere, provided they are identified with an association. The limit on a single exposure is \$3000 on either building or stock, or divided between the two.

The Missouri company has not yet commenced taking insurance outside the State, except on approval of the Executive Committee. It insures only members of associations, and limits the risk to \$2000.

SAMUEL H. GROSER, who for almost ten years has been in the employ of Oliver Brothers, New York, Hardware buyers, has become associated with The Iron Age in the business department. Oliver Brothers consented to Mr. Groser leaving them simply because there is a limit to the houses they can advantageously serve as buyers, and they have reached a position where it is unnecessary to solicit new accounts. Mr. Groser's duty was the cultivation of business relations between his house and both jobbers and manufacturers, a line of work in which he was exceptionally successful. Oliver brothers speak of Mr. Groser in the highest terms, both as to his ability and his personal qualities, and as a testimonial of their regard presented him on leaving with a handsome pearl and diamond scarf pin. Groser began his business life with the Russell & Erwin Mfg. Company, and after a few years' service went with Strong, Hackett & Co., St. Paul, Minn., large jobbers of Hardware. From St. Paul he came to New York into the eastern office of Huntington, Hopkins & Co., finally becoming buyer and assistant manager under Mr. Miller.

Stringfellow & Tannehill, Roswell, N. M., have favored us with two photographs of their attractive and capacious storeroom, which is 50 x 100 feet in dimensions. Their building is 200 feet long. The north side of the store is devoted to the display of their general Hardware stock, while the south side is used to exhibit their line of Buggies. The store has been fitted up with Warren shelving and accommodates and displays a large and varied stock to excellent advantage.

Edward T. Dell has bought out the Hardware business of Schoen Bros., 1106 Patterson avenue, Baltimore, Md., and will continue at the old stand.

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WESTERN MASSACHUSETTS HARDWARE ASSOCIATION.

THE annual meeting and outing of the Western Massa chusetts Hardware Association were held at the Pequot Club, Morris Cove, New Haven, Conn., Wednesday, July 13. It was also the tenth anniversary of the organization of the association, which made the occasion all the more interesting. The association has had a prosperous existence, for it has accomplished the getting together of the Hardware dealers of Springfield. Holyoke and other places in that section of Massachusetts on a basis which has done away with abnormal cutting of prices, and has placed the dealers in a position to make a fair profit on their goods. Bi-monthly meetings and dinners are held which contribute to the general good feeling which prevails in the trade in the territory covered by the association, which is in sharp contrast to conditions in some other places in Western Massachusetts that have not yet joined in the movement.

Beyond the election of officers, little business was transacted at the business meeting, the remainder of the time being devoted to the enjoyment of seaside sports and an excellent dinner. The officers elected were as follows:

PRESIDENT, C. N. Bacon, the B. L. Bragg Company, Springfield. VICE-PRESIDENT, F. E. Stacy, the E. S. Stacy Machine Company, Springfield.

SECRETARY AND TREASURER, O. H. Dickinson, the B. L. Bragg Company, Springfield.

Company, Springfield.

EXECUTIVE COMMITTEE: These officers, and C. A. Foster, C. A. Foster & Bros., Northampton; Fred. Shepard, James H. Bryan Company, Westfield; C. W. Rackliffe, Holyoke, and M. J. Hall, the Highland Hardware Company, Springfield.

C. J. Blackstone of Springfield, the first president of the association, who has retired from business, was made an honorary member. The firm of Alderman & Carlisle, who have purchased Mr. Blackstone's business, were elected to membership.

In the afternoon the members of the association entertained the members of the Connecticut State Association of Retail Hardware Dealers.

REQUESTS FOR CATALOGUES, &c.

The trade are given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

REQUESTS for catalogues price-lists, quotations, &c., have been received from the following houses:

From Edmunds & Galloway, a new firm who succeed H. W. Webb & Sons, 121 West Pratt street, Baltimore, Md., jobbers in foreign and domestic Hardware.

From Bessette-Burwell Hardware Company, Saratoga Springs, N. Y., which has been incorported with a capital stock of \$10,000 to carry on the retail business in Shelf Hardware, Stoves, Tinware, Agricultural Implements, Sporting Goods, &c.

From Orr Bros., Enfield, Ill., who have lately purchased Welsh & Holl's stock of Hardware, Stoves, Agricultural Implements, &c.

From J. B. Chambers & Son, Danville, Ill., who have recently opened a branch Hardware and Implement store at Henning, Ill.

From A. E. Sprague, Poland, N. Y., who has recently purchased the Hardware, Stove and Furniture business of C. C. Cruikshank.

THE MONARCH BOLT & SCREW COMPANY.

THE MONARCH BOLT & SCREW COMPANY, Cleveland, Ohio, a recent organization, has just issued a catalogue of its products, including Stove and Tire Bolts, Machine Screws, Rivets and Pins, special Bolts and Screws, and cold pressed Hexagon, square, chamfered, trimmed and plain Nuts. In the near future the company expect to take up the production of Carriage Bolts. The new company refers to their mechanics as all

men of experience in this line, having been formerly employed in a similar enterprise, and will, it is stated, turn out goods of high quality exclusively.

ALBANY HARDWARE & IRON COMPANY'S NEW CATALOGUE.

THE ALBANY HARDWARE & IRON COMPANY, Albany, N. Y., has just issued a fine example of illustrated and descriptive catalogue of General Hardware, Cutlery, Tools, Metals and supplies of various kinds. The matter it contains has been compiled entirely from their inventory and stock sheets, thus representing the actual goods carried in stock and such as their experience has proven are needed to supply completely the wants of the Hardware trade in their territory. The book contains 1295 pages, each 111/2 x 81/2 inches, and is bound in heavy board covers, weighing about 12 pounds. Two front pages show respectively, illustrations of store, offices and salesrooms, 39-43 State street, and a large warehouse for Heavy Hardware and Metals at Division and Dallius streets. There are 57 pages of index, three columns on a page, to facilitate the finding of articles wanted. Comprehensive as this book is, the company issues special catalogues each season of an extensive line of Sporting and Athletic Goods, Fishing Tackle, Arms and Ammunition, not incorporated in this volume. Separate catalogues of Tinware, Enameled Ironware and Builders' Hardware are also issued. This is the first catalogue of large dimensions which the company has issued, and the officers are to be congratulated on its convenience and comprehensiveness. It will doubtless be much appreciated by the customers of the house. This long established business was incorporated in 1891, the officers of the company now being: Chas. H. Turner, president; James K. Dunscomb, treasurer, and W. B. Wackerhagen, secretary.

TRADE ITEMS.

STERLING EMERY WHEEL COMPANY, Tiffin, Ohio, invites its friends who visit the World's Fair to have their mail addressed in the care of the company during their stay in St. Louis. The company's exhibit is in the Machinery Building, Aisle C, near east entrance.

DANA & Co., Cincinnati, Ohio, a copartnership, has become Dana Mfg. Company, incorporated under the laws of Ohio. The management of the company, which manufactures the Peerless Iceland Freezers, continues unchanged. The officers of the new corporation are: George F. Dana, president and treasurer; S. F. Dana, vice-president; Frank M. Shook, general manager; J. E. Sullivan,

THE TOLEDO COOKER COMPANY, Toledo, Ohio, is now in possession of its new plant, which is referred to as especially well equipped for the manufacture of its products, including the Ideal Steam Cooker, Ideal Vapor Bath Cabinets and other specialties.

THERE will be a combined meeting of the Executive Committee of the Wisconsin Retail Hardware Association and of the directors of the Hardware Dealers' Mutual Fire Insurance Company of Wisconsin at Green Bay, Beaumont House, on August 2. During the first three months of the insurance company \$300,000 worth of business has been secured.

KELLEY, MAUS & CO. BUYS KIMBARK BUSINESS.

ELLEY, MAUS & CO., Chicago, has purchased the stock, accounts, good will and business of the S. D. Kimbark Company, the oldest Heavy Hardware house in Chicago. It will be recalled that the Kimbark Company went into the hands of a receiver some months ago and that two weeks ago settlement was effected with the creditors and the receiver was discharged. Kelley, Maus & Co. bought the business of Thompson, Hoof & Co. about two months ago. The stock from the Kimbark house will be transferred to Kelley, Maus & Co.'s warehouse,

CONNECTICUT STATE ASSOCIATION OF RETAIL HARDWARE DEALERS.

THE Connecticut State Association of Retail Hardware Dealers held their annual outing, together with their semiannual business meeting, at the Momauguin, New Haven East Shore, Wednesday, July 13. The day broke rainy and cheerless, with little apparent prospects of clearing, which accounted for a somewhat smaller attendance than would otherwise have been the case. But the party that gathered at the beautiful shore resort to enjoy a day that proved to be perfect in its weather was a representative one, and the members had a most enjoyable time, as well as transacting considerable important business.

It had been expected that there would be a representative attendance of the manufacturers of Builders' Hardware. Invitations had been sent to the officers of the large companies, and the hope was that the vital question of the selling of Builders' Hardware direct from the manufacturer to the consumer would be threshed out in a friendly spirit, with directly beneficial results to all concerned. But every one of those invited from this class of



W. A. CHURCH, President.

manufacturers sent his regrets. The solitary exception among the Hardware manufacturers to whom invitations were sent was William G. Smythe of the American Screw Company of Providence, R. I.

President W. A. Church called the meeting to order late in the forenoon. After the reading of the minutes of the annual meeting and the transaction of various routine business ex-President A. H. Abbe of New Britain made his report as the delegate of the association to the Indianapolis convention of the National Association, in which he spoke with much enthusiasm of the work accomplished and of the hearty greeting that had been accorded him as the only delegate present from the New England States.

Catalogue House Ouestion.

President Church referred to the report of the joint committee of the National Hardware Association, the National Retail Hardware Dealers' Association and the Southern Hardware Jobbers' Association on the catalogue house question, which, he said, has the full sympathy of the Hardware dealers of Connecticut. Mr. Abbe stated that he had been particularly impressed with one paragraph of the report, which he read, as follows:

With the desire of placing in the hands of the jobbers and retailers a simple and ready reference of lines of goods and prices shown in the catalogues of prominent catalogue houses, it is proposed to compile a digest of the prices published in the Hardware line by the best known catalogue houses, together with the names of the brands. In cases where the descriptions of the goods offered for sale are purposely misleading, the correct names, numbers and other description of the goods will be

Resignation of Secretary Way.

The president announced the resignation of Secretary Charles L. Way of Hartford, who has severed his connection with the Hardware trade to enter the automobile business in Boston. George J. Bassett of New Haven, in moving the acceptance of the resignation, gave warm praise to the energy and ability which characterized Mr. Way's service as secretary of the association, and moved a vote of thanks and good wishes, which was carried.

President Church appointed a committee, consisting of A. H. Abbe, George J. Bassett and Charles G. Agard of Torrington, to bring in the name of a secretary. The committee reported the name of James De F. Phelps of Windsor Locks, Conn., and he was unanimously elected secretary of the association.

Minimum Price on Universal Bread Maker.

A letter was read from Landers, Frary & Clark of New Britain setting forth their effort to preserve a minimum price on their Universal Bread Maker, and blank agreements to maintain the price of \$2.25 were distributed among the members. President Church took occasion to state his belief that Landers, Frary & Clark were perfectly honest in this matter, and gave an instance to prove his assertion. In their letter they intimated that they "do not know in what other way we can accomplish the object of maintaining the price, so well as by getting the support of all the retail Hardware dealers' associations, nor do we know of any other way of getting at it directly, except in the way which we hereby take." They express the hope that the members of the associa-tion "will be glad to help in this practical method of bringing about results which will be for our mutual advantage."

Mutual Fire Insurance.

Eli C. Birdsey of Meriden read the report of the committee appointed to consider the advisability of establishing a Hardware Mutual Insurance Company in Connecticut, as follows:

We have considered this matter both as to the advisability of the organization of a Hardware dealers' mutual insurance company in this State and of giving our patronage in this line

to the companies already established and in working condition Your committee unanimously agree that the so-called "Bos which we are all now paying are excessive and in some locations have been recently increased, and that there is no reason why the retail Hardware dealers of Connecticut should assist to pay the large salaries of the officers of the old companies or contribute to the losses by the payment of excessive premiums to these companies, occasioned by the large configurations in various portions of the country during the last year. Your commitous portions of the country during the last year. Your committee also agree that while some time in the future it may be advisable to organize a company on these lines among the members of this association, that there are many good and substantial reasons why such a company should not be organized at present.

There are three mutual insurance companies doing this business for the Hardware dealer (and others being organized in several of the Western States), charging the regular "Board Rates," and declaring annual dividends on such premiums paid of from 25 to 50 per cent. These are all conducted seemingly on a safe and substantial basis and by gentlemen, most of them in the Hardware business trade, knowing the risks and responsibilities of the business trade, knowing the risks and responsibilities of the business and substantial basis and by gentlemen, most of them in the Hardware business trade, knowing the risks and responsibilities of the business and substantial basis are substantial basis and substantial basis and by gentlemen, most of them in the Hardware business trade, knowing the risks and responsibilities of the business and substantial basis are substantial basis and by gentlemen. ities of the business, and your committee recommend as a saving to the members of this association your patronage of these comnanies

The Minnesota Retail Hardware Dealers' Fire Insurance Company of Minneapolis, Minn. The Hardware Dealers' Mutual Fire Insurance Company of

PENNSYLVANIA of Huntington, Pa.

NATIONAL HARDWARE DEALERS' MUTUAL FIRE INSURANCE COMPANY of Huntington, Pa.

Your committee are prepared to give you the details of the

plan of insurance adopted by these association companies, which plans are practically the sam The report was signed by Mr. Birdsey, A. H. Abbe

and Charles G. Agard. The report was accepted.

W. B. Simpson of Huntington, Pa., secretary of the Pennsylvania and the National companies, was present and told of the workings of these mutual companies, answering freely questions from the members.

The Builders' Hardware Question.

D. N. Clark of Shelton, for the committee which drafted the resolutions to the manufacturers of Builders' Hardware and Screws, already printed in The Iron Age, read the letters received from several manufacturers, and commented upon them. The matter was also referred to in several of the addresses at the dinner, as noted elsewhere.

An Excellent Dinner

Followed the meeting, and afterward there was speaking. which was somewhat curtailed because of the invitation of the Western Massachusetts Hardware Association to visit with its members, at the Pequot Club, at Morris Cove, where it was holding its annual outing. Western Massachusetts Association has been in past years the recipients of the hospitality of Connecticut dealers, and they wished to reciprocate.

President Church, in calling the gentlemen to order at the conclusion of the dinner, said that it was "a matter of deep disappointment that we have not with us a handsome representation of the manufacturers of Builders' Hardware of New England. We hoped they would be with us. We extended every inducement to them to have them here. They have not come. I had hoped that they would be here and we could have threshed out the whole subject of the question of the manufacturer selling direct to the consumer. We have one solitary exception here, Mr. Smythe of the American Screw Company.

The president then called on ex-President Abbe. who said, in part:

I tried to induce five of the manufacturers of Builders' Hardware to meet with us here to-day. They gave



JAMES DE F. PHELPS, Secretary.

one reason or another for not coming: It is the vacation season, they had a meeting to attend, or had been away, or something. But in my opinion the real reason is they don't dare to meet us. I make the exception of the American Screw Company. The gentlemen are very free to admit these wrongs and grievances. They know they are wrong; they admit it. But what are we going to do about it? The manufacturer wants our business. The jobber wants our business. You have all read the doings of the Atlanta convention. Mr. Simmons made a hearty speech, in which he said the jobber should buy of the manufacturer, the retailer of the jobber, and the consumer of the retailer; but he did not say he had stopped manufacturing. What does he manufacture? He manumanufacturing. What does he manufacture? He manufactures Hatchets and anything else that comes his way We complain because the consumer wants to go to the manufacturer, but we try to jump over the jobber. I wish there was a law that would prevent the retailer from buying of the manufacturer, and the jobber from manufacturing, and the manufacturer from selling to the consumer. The time is coming when the manufacturers will have to stop selling to the consumer direct. They are doing it in New Britain every day. I don't know what to do about it. We get a commission when we find it out. When we don't find it out we get nothing.

Charles G. Agard of Torrington did not wholly agree with Mr. Abbe, remarking: "We cannot do all our business with the jobber, for sometimes we can do better with the manufacturer.'

W. A. Watts of the Bronson & Townsend Company of New Haven, speaking as a jobber, said:

I am in hearty sympathy with the movement for greater sympathy all along the line. We do not think such an association as this is against the interests of the jobber, and until it is otherwise demonstrated we are going to keep on sawing wood. But whether the jobber or the old fashioned Hardware dealer or the catalogue house or the department store is driven to the wall, we know one thing: that the fittest will survive. We wish know one thing: that the fittest will survive. We wish there were more such local associations. That at New Haven has been of inestimable value to local dealers. It the getting together, the getting acquainted, ing it over. I don't know what they used to think of one another. If I did, it would'nt be safe to tell you. But I know how it is now. They got together, ate together, and when they are eating together once a month they are not apt to quarrel.

Other speakers were Eli C. Birdsey of Meriden, John Nelson of The Iron Age, F. T. Blish, South Manchester, and I. C. Treat, Hartford.

After dinner the party took electrics for the Pequot House, where a pleasant two hours were passed with the Western Massachusetts Hardware Association.

List of Those in Attendance.

Those present at the Momauguin were as follows:

W. A. Church, the F. Hallock Company, Derby.
Charles G. Agard, Agard Hardware Company, Torrington.
A. H. Abbe, A. H. & E. W. Abbe, New Britain.
W. B. Simpson, Huntingdon, Pa.

W. B. Simpson, Huntingdon, Pa.
Eli C. Birdsey, Birdsey & Raven, Meriden, Conn.
G. W. Merwin, Dickerman & Pond, Winsted.
G. H. Pond, Lightbourn & Pond Company, New Haven.
Wm. G. Smythe, American Screw Company, Providence, R. I.
E. G. Swift, Syracuse Plow Company, Syracuse, N. Y.
Frank T. Terry, T. P. Terry & Son, Ansonia.
D. N. Clark, Shelton.
F. H. Smith, Smith & Bissell, Middletown.
George H. Baker, Company, New Haven

F. H. Smith, Smith & Bissell, Middletown. George H. Baker Company, New Haven. John M. Page, J. M. Page & Co., Naugatuck. George D. Buck, J. M. Page & Co., Naugatuck. S. L. Ewald, Lyon & Ewald, New London.

E. E. Grummon, Lyon & Grummon, Bridgeport. H. L. Blakeslee, F. F. Hitchcock & Son, Woodbury. W. H. Mead, Bronson & Townsend Company, New Haven.

W. H. Morrison, Torrington. W. H. Morrison, Torrington.
E. M. & M. Walsh, New Haven.
J. L. Carroll, Winsted.
H. T. Clark, Willimantic.
M. B. Dickerman, Wallingford.

Roland T. Warner, New Haven.
T. F. Blish, South Manchester.
H. W. Kelley, New Haven.
I. C. Treat, Clapp & Treat, Hartford.
Frederick C. Leighton, Connecticut Hardware & Paint Company.

Thomas H. Hull, New Haven.

W. A. Watts, the Bronson & Townsend Company, New Haven. George J. Bassett, the John E. Bassett & Co., New Haven.

James De F. Phelps, N. S. Bidwell & Co., Windsor Locks. Charles N. Downs, Derby, Conn.

John Nelson, The Iron Age.

MISCELLANEOUS NOTES.

Adjustable Hip Shingles.

The Galesburg Cornice Works, Galesburg, Ill., are placing on the market an adjustable hip shingle stamped from tin, galvanized iron or copper. These shingles, which are ornamental in design, are of suitable length to be laid in each course of shingles or slate, so that the hip covering will have sufficient lap. They are adjustable, varying with widths of shingles. A small offset or shoulder in the side of the metal shingle is made to fit closely against the butts of the wood shingle, serving as a gauge in putting them on, and closing the triangular opening that would be left at this point if a continuous metal or wood covering were used.

Smaragdin or Solid Alcohol.

The Universal Novelty Company, 1358 Broadway, New York, are marketing a preparation they call Smaragdin, otherwise alcohol, in stiff, jelly like, %-inch cubes, of a greenish color. It is designed to serve any heating purpose for which liquid alcohol would ordinarily be employed, the advantage being the ease and safety with which it can be carried about, freedom from danger of explosion, &c. It is quickly ignited with a lighted match or any flame, and burns entirely away, the volume of heat developed being regulated by on the numbeer of cubes

New Improved Reliance Washing Machine.

The Fawkes Mfg. Company, Minneapolis, Minn., is offering a washing machine, shown herewith. The dolly inside is driven in the opposite direction from the tub by a very simple roller bearing lever mechanism, thus doing away with the cog and internal gear as in the machines heretofore made. The simplicity of the machine,



New Improved Reliance Washing Machine.

absence of grease and machinery, with its accompanying annoyances, on the top of the machine, and the easy position of the operator beside the machine are emphasized by the company.

Electric Irons and Temperature Regulator Stand.

The Simplex Electric Heating Company, Cambridge, Mass., is offering the electric iron and the temperature regulator stand shown in the accompanying cuts. The iron illustrated in Fig. 1 is large enough to be thoroughly practical for many minor uses, such as pressing, &c., when living in hotels or when traveling. It is nickel plated, with a handle of light wood, and weighs 3



Fig. 1 .- Electric Pressing Iron.

pounds. The stand is of white metal, mounted on a slate base. The iron is furnished complete with plug and 6 feet of cord, so it can be readily connected by any one to a lamp socket, The automatic temperature regulator, shown in Fig. 2, consists of a stand to receive an iron. It is so arranged that the current supplied to the iron when on the stand is only that necessary to maintain working temperature. On removing it the extra heat supply required for the work is put into the iron by the

tiow of current to its full capacity. The regulator, it is explained, cheapens the cost of operation from 20 to 30 per cent., prevents injurious overheating, permits irons being kept ready for immediate use at minimum cost and

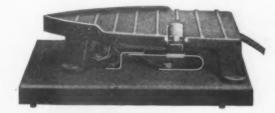


Fig. 2.—Electric Automatic Temperature Regulator Stand.

avoids accidental burning of work. The regulator is designed for use with electric laundry, factory and tailors' irons,

Rocky Mountain and Folding Leaf Sights.

The accompanying cuts show sights which the J. Stevens Arms & Tool Company, Chicopee Falls, Mass., is putting on its No. 17 Favorite rifle, as an improvement. The sight shown at the top is the Rocky Mountain

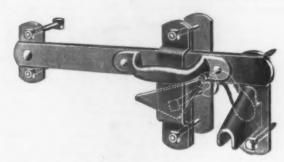


Rocky Mountain and Folding Leaf Sights.

front, while the other two illustrate Stevens' Folding Leaf rear sights. The addition of the sights will make no change in the cost of the rifle.

Richards Bull Dog Steel Door Latch.

The Richards Mfg. Company, Aurora, Ill., is bringing out a new door latch, as shown herewith. The



Richards Bull Dog Steel Door Latch.

latch bar is raised and lowered by means of the triangular lifter moving on an adjustable spindle and controlled by the outside handle. The latch engages a presssed steel lock, whose form facilitates the automatic latching of the door when it is slammed shut. The illustration shows the inside, while the dotted lines indicate the handle on the outside and the spindle and lifter between the two.

Sheet Steel Lockers.

The Hart & Cooley Company, New Britain, Conn., New York office with the Stanley Works, 79 Chambers street, who are also selling representatives, has recently

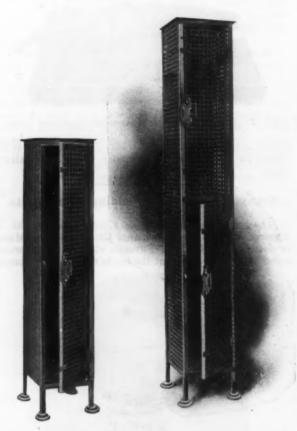


Fig. 1.—Single Locker, Open Front, Closed Sides and Back.

Fig. 2.—Double Tier Locker, Open Front and Sides, Solid

put on the market a group of H. & C. lockers for clothing, as here shown. The perforated portions are stamped out of wrought steel in single or double tier styles. Fig.

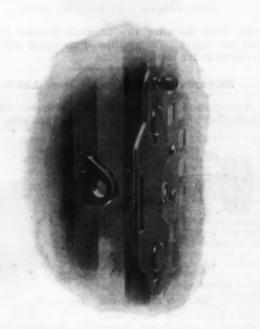


Fig. 3.-Locker Catch.

1 illustrates a single locker, with open work door and solid sides and back, the dimensions of which are 15 x 15 x 60 inches. Fig. 2 shows the double tier locker, with upper and lower compartment, a door for each, the front and sides being open work, with solid back. Fig. 3 is a

reproduction of the patented locker catch for securing the door, the lock bolt locking the plate, which is made from heavy steel to prevent any possibility of prying it open. Another style regularly catalogued is similar to the double tier locker, Fig. 2, except that it is a single locker and similar to Fig. 1, the front and sides being open and back solid. These lockers are designed for the use of schools, colleges, gymnasiums, armories, clubs, factories, office buildings and institutions of any kind. They can be made along these lines, according to specifications of purchasers, in a great variety of ways from any thickness of steel, any size and almost any finish, although they are most often handsomely japanned a fine black. Sometimes the sides are closed and top and bottom open, so that by the aid of blowers or exhaust fans currents of pure air are constantly drawn through the locker lengthwise.

The Columbus Recording Door Lock.

The recording lock shown in Fig. 1 of the accompanying cuts is described as a device which combines within itself all the good features of the finest Yale lock with the accuracy of registration of a cash register or time



Fig. 1.—Columbus Recording
Door Lock.

Fig. 2.—Copy of Record by Recording Lock.

recorder. It is 12 inches long, 4 inches wide and 2 inches deep. It is put up in a chased cabinet and is referred to as adding to the appearance of any door. In addition to the lock proper, which is one of the best Yale locks made, it includes ingenious mechanism which records and registers every movement of the bolt either in locking or unlocking the door. It is controlled by a certain number of keys, which may be given to various employees, each bearing a different initial. The keys register not only their individual initial, but the exact time, date and month upon which the door is either locked or unlocked, as shown in Fig. 2. The protection thus afforded to the merchant who has no means of knowing who goes in or out of his store after it has been locked for the night, it is remarked, cannot be overestimated. Cases come daily to light, it is explained, where discharged employees with duplicate keys have organized and carried out systematic robbery, undiscovered for a long time. The installation of this lock, it is claimed, will absolutely prevent this and will at once remove the possibility of theft from this source. The device is put on the market by the International Mfg. Company, Columbus, Ohio, which has published a booklet, entitled "A Sleep-less Watchman," which it will mail upon request.

Union Hardware & Metal Company, Los Angeles, Cal., has increased its capital stock from \$600,000 to \$1,500,000. The increased capital is considered necessary for the conduct of its business, which has materially enlarged.

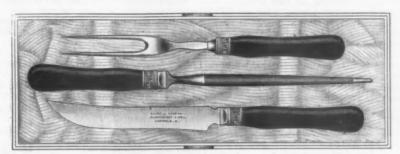
Steak or Bird Carver No. 42,327,

The carving set shown herewith has been put on the market by the Goodell Company, Antrim, N. H. The newly designed blade is made of the best grade carver steel, 5 inches long; the fork and ornamental trimmings are nickel plated; the steel is well proportioned and cut by a new process; the handles are of ebony and the set

tricate parts and the peculiar action of the spring are especially alluded to by the company, which makes the hinge in four sizes to suit doors of various dimensions.

New Wall Coffee Mill.

The Logan & Strobridge Iron Company, New Brighton, Pa.—branch of the National Novelty Corporation, 826



Steak or Bird Carver No. 42,327.

is packed in a satin lined display box. The manufacturers remark that the demand for small carvers is growing faster than for the larger sizes.

The Handy Household Ice Scraper.

The ice scraper shown in the accompanying cut, in connection with a tumbler, is offered by A. E. Faber, Jr..



The Handy Household Ice Scraper.

Plainfield, N. J. The scraper, which is alluded to as built upon correct and scientific lines, is coated with aluminum bronze, presenting an attractive appearance. The point is made that the absence of an iron cup reduces the weight and avoids the catching of dirt.

Columbian Floor Spring Hinge.

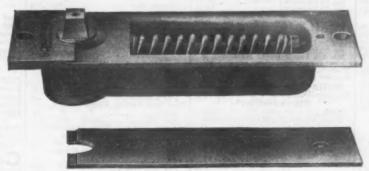
The floor spring hinge illustrated herewith is the product of the Columbian Hardware Company, Cleveland, Ohio. The hinge is ball bearing, and is referred to as having exclusive features of application and construction. It is compact, occupying small space in the floor,

Proadway, New York—is placing on the market a wall coffee mill of entirely new construction, as shown in accompanying cut. The mill is provided with bright,



New Wall Coffee Mill.

clear glass hopper or canister, with nickel plated screw cap, and glass receiver supported underneath by means of spring bracket, which holds it tight against the cover, rendering the mill air tight, thus preserving the strength and aroma of the coffee. The coffee being always in sight, it is never necessary to open the canister except to fill. The improvement is in the method of attaching the receiver,



Columbian Floor Spring Hinge.

particularly in depth. The tension may be regulated at any time without disturbing either the hinge or door, and it is also made so that the door may be put in place or entirely removed in a moment's time without interfering with or removing a single part of the hinge. It is also pointed out that it is noiseless and protected against dirt or moisture. The absence of a multiplicity of in-

which allows the use of any kind of glass tumbler or cup should the one furnished with the mill become lost or broken. It is remarked that by an improved method of packing the danger of breakage in shipping is entirely eliminated. The mills are fitted with double lock nut regulators and latest improved grinders, the iron parts being nicely finished in black enamel and nickel.

Current Hardware Prices.

REVISED JULY 19, 1904

General Goods.—In the following quotations General Goods
—that is, those which are made by more than one manufacturer, are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Ouotations printed in the ordinary type.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33¹/₃ @ 33¹/₃ & 10% signifies that the

Λ .	Axies- Iron or Steel	Hand-	Norway Iron 80@80&10%
Abrasives— Adamite in Carloads:	Concord, Loose Collar 5@514c	Hand Bells, Polished, Brass	Norway Iron
Crystal \$ ton \$90@100	Concord, Solid Collar	White Metal	Eagle Phila. list Oct. 16, '8489365 Bay State. 11: 1 100. 28 '09 7214
Crystal	No. 114 Com. New Style	Nickel Plated	Franklin Moore Co.:
Adjusters, Blind-	Nos. 7, 8, 11 and 12 60&5@60&10%	Stokes	Franklin Moore Co.: Norway Phila , list Oct. 10, '84805. Eagle Phila, list Oct. 10, '84835.5 Eolipse, list Dec. 28, '9
Domestic, # dos. #3.00	Nos. 13 to 14		Russell, Burdsall & Ward Bolt & Nut Co.
Zimmerman's -See Fasieners, Blind.	Nos. 19 to 22	Farm Bellslb. 24@24	Empire, list Dec. 28, '99
Window Stop-	Boxes, Axle-	Farm Bells	Upsen Nut Co.: 7914
Taplin's Perfection	Common and Concord, not turned	AmericanTube & Stamp'g Co.Gongs 75%	Borers, Tap-
Ammunition—See Caps, Car- tridges, Shells, &c.	Common and Concord, turned	Table Call Bells	Borers Tan Ring with Handles
Anvile-American-	Half Patent	Beiting- Rubber-	Inch
Eagle Anvils. P 5 746746 Hay-Budden, Wrought. 96946 Horseshoe brand, Wrought. 96946 Trenton. P 5 96946	Bait- Fishing-	Agricultural (Low Grade) 78@75&5%	Inch 214 21/2
Hay-Budden, Wrought	Hendrey.	Common Standard	Per Doz
Imported—	A Bait	Extra	2, \$1.65; No. 8, \$2.50 each25%
Peter Wright & Sons \$ 3 10%	Balances- Sash-	High Grade 59&5@50&10%	Boxes, Mitre-
Anvil, Vise and Drill-	Balances Sash—Caldwell new list	Leather-	C. E. Jennings & Co
Millers Falls Co., \$18.0015&105	Spring-	Extra Heavy, Short Lap60@60&54 Regular Short Lap 60&10@60&10&10%	Perfection doz. \$30.00 Schatz40%
Apple Parers See Parers,	Spring Balances 60@60&5%	Standard	Buscos-
Aprons, Blacksmiths'-	Light Spg. Balances 40&10\$	Light Standard	Common Ball, American. \$1,15@1.25
Aprons, Blacksmiths'— Hull Bros. Co	Light Spg. Balances. 40&10s StraightBalances. 40s Circular Balances 50s Large Dial. 30s	Leather Lacing Sides, per sq. ft 18c	Barber's
Augers and Bits-	Pelouze	Bench Stops-SeeStops, Bench	Fray's No. 70 to 120, 81 to 123, 207 to
Com Louble Spur 75@75@5%	Barb Wire-See Wire, Barb.	Benders and Upsetters,	C. E. Jennings & Co
Boring Machine Augers66%@70% Car Bits, 12-in, twist60@60d:10%	Bare- Crow-	Detroit Perfected Tire Bender	Mayhew's Ratchet
Jennings' Pattern 50&10&5@60\$	Steel Crowbars, 10 to 40 lb., per lb.,	Detroit Perfected Tire Bender40% Green River Tire Benders and Upset-	Common Ball, American. \$1.15@1.25 Barber's. 50&10&10@50&10g Fray's Genuine Spofford's
Car Bits, 13-48, 10144	Towel-	ters. 20% Detroit Stoddard's Lightning Tire Up- setters. No. 1, 84.35; No. 2, 87.25; No. 8, \$10.50; No. 4, \$16.55; No. 5, \$30.50.	Brackets-
C. E. Jennings & Co.: No. 10 ext. lip. R. Jennings' list 25& 10%	No. 10 Ideal, Vickel Plate p gro, \$8.50	setters, No. 1, \$4.25; No. 2, \$7.25; No. 3, \$10.50; No. 4, \$16.55; No. 5, \$30.50.	Wrought Steel
No. 30. R. Jennings' List. 40&7%&10%	Beams, Scale— Scale Beams, List Jan. 12, '82.40£105 Chattillon's No. 1	Bicycle Goods-	Wrought Steet
L'Hommedieu Car Bits 15&10s	Chattilion's No. 1	John S. Leng's Son's 1909 list; Chain	Full cases. 50-610-610-8 Broken cases 60-610-610-8 Griffin's Pressed Steel 80-6 Griffin's Pressed Steel 70-610-8 Stowell's Cast Shelf 75-8 Stowell's Sink 80-6 Western, W. G. Co., Wire 80-610-8
L'Hommedieu Car Bits 106-108-108-108-108-108-108-108-108-108-108	_Beaters- Carpet-	Parts50%	Griffin's Folding Brackets70&10%
Ohio Tool Co.'s Balley Auger and Car	No. 12 Wire Coppered # doz #0.85;	Spokes	Stowell's Cast Shelf
Pugh's Black	No. 11 Wire Coppered @ doz. \$1.10;	Bits-	Western, W. G. Co., Wire
Snell's Auger Bits	Tinned	Auger, Gimlet, Bit Stock Drills, &c.— See Augers and Bits.	Bright Wire Goods-See
Hills	Western W. G. Co.	Blocks- Tackle-	Wire and Wire Goods.
list)	No. 1 Electric	Common Wooden 70&10@75&5	Western W. G. Co
Bit Stock Drills-	Egg-	ent Bheaves	Western, W. G. Co
See Drills, Twist.	Holt No. A. Japanned P doz. \$1.20	Lane's Patent Automatic Lock and Junior	Buckets, Well and Fire-
Clark's small, \$18; large, \$26,50&10\$	Holt-Lyon Co.: Holt, No. A. Japanned © doz. \$1.20 Molt, No. 1. Tinned © doz. \$1.30 Holt, No. B. Japanned © doz. \$2.20 Holt, No. 2. Tinned © doz. \$2.20 Lyon, No. 3. Japanned © doz. \$1.25 Lyon, No. 3. Japanned © doz. \$1.25 National Mfg. Co.: Ø gro. No. 1 Dover, Family size \$7.00 No. 3 Dover, Hotel size \$4.00 Taplin Mfg. Co.: © gro.	Lane's Fatent Automatic Lock and Junior Junior 30s Stowell's Novelty, Mal. Iron	Bucks Saw-
Clark's Pattern, No. 1, # doz., \$96;	Holt, No. 2, Tinned doz. \$2.25	See also Machines, Hoisting.	Hoosler \$ gro. \$36.00
Clark's Pattern, No. 1, \$\Psi \text{dos., \$96;} \ No. 2, \$18. 50&105 \ Ford's, Clark's Pattern	Lyon, No. 8, Japanned W doz. \$1.25	Boards, Stove-	Bull Rings-See Rings, Bull,
C. E. Jennings & Co., Steer's Patxox10x	National Mrg. Co.: # gro. No. 1 Dover, Family size\$7.00	Zinc, Crystal, &c30&10@40&10%	Butts- Brass-
Gimlet Bits-	No. 3 Dover, Hotel size	Bolts-	Wrought list Sept., '96 20@304
Common Double Cutgro. \$3.00@8.25 German Patterngro. \$4.50@4.75	No. 68 Improved Dover	Carriage, Machine, &c	Cast Brass, Tlebout's50%
Hollow Augers-	No. 100 improved Dover	Phila. Eagle, \$3.00 list May 24, '99	Cast Iron— Fast Joint, Broad
Bonney Pattern, per doz. \$10.00@11.00	No. 150 Improved Dover, Tin'd\$8.50 No. 150 Improved Dover, Hotel\$15.00	Bolt Ends, list Feb. 14, '95 75@\$	Fast Joint, Narrow50@50&10\$
Ames	No. 152 Imp'd Dover, Hotel, T'd\$17.00 No. 200 Imp'd Dover Tumbler\$8.50	Machine with C. & T. Nuts	Loose Pin
Universal20% Wood's Universal25%	No. 202, Imp'd Dover Tumbler, Tin'd. \$9.50	Machine with C. & 1. Nuts	Mayer's Hinges70&5@70&10\$. Parliament Butts70&5@70&10\$.
Ship Augers and Bits-		Door and Shutter-	
Ford's40% C. E. Jennings & Co.;	Wonder (8. 8. & Co.) # gro. net, \$6.00	Cast Iron Barrel, Round Brass	Wrought Steel-
L'Hommedleu's	Bellows— Blacksmith, Standard List75@.75&5%		Table and Back Flaps
Ohio Tool Co.'s	Dis alassa Mars	Let (100	Inside Bund
Awl Hafts, See Hafts, Aud.	Inch., 30 38 34 36 38 40]	Cast Iron Spring Foot:	Loose Pin, Ball and Steeple Tip
Awis- Brad Aule:	Each.\$3.50 3.75 4.35 4.80 8,35 6,15 Extra Length:	Inch	80.400
Handled aro. \$2.75@.3.00	Frank of on t fit f to f on f to 7 foll of	Inch 6 8 10	Japanned, Ball Tip Butts 70@10% Bronzed Wrt. Nar. and Inside
Handledgro. \$2,75@3,00 Unhandled, Shouldered.gro.63@660	Inch 10 13 14 &	Inch	Blind Butts55&10%
Unhandled, Patentgro. 66@70s Peg Awls:	Inch 10 12 14 5 Dos \$8.50 10.00 13.00 3	1 Inch B # 10	Cages, Bird-
Unhandled, Patent gro. 31@34c	Hand-	Per dos \$0.57 .80 1.00	Hendryx, Brass:
Unhandled, Shouldered.gro.65@70c Scratch A. 18:	Inch 6 7 8 9 10	Per dos	Hendryx, Brass: 3000, 5000, 1100 series
Handled, Commongro. \$3.50@4.00	Bells- Cow-	Wrought Flush, B, K. 50&10@60&10% Wrought Shutterlo&10&10@60&5 Wrought Square Neck50@50&10%	300, 300, 600 and 900 series404104
Handled, Socketgro, \$11.50@12.00 Hugwood40%	Ordinary goods 75&5@75&10%	Wrought Square Neck 50@504:105	700, 800 series
Awl and Tool Sets-See Sets, Awl and Tool.	High grade	Wrought Sunk, Flush50@50c10% Ives' Patent Door60%	
	Texas Star50%	Stove and Plow-	Callpers-See Compasses.
Single Bit, base weights (up to 3% lb.)	Abbe's Cope	Plow	Calks, Toe and Heel-
First Quality	Barton Gong	Stope	Blunt, 1 prongper lb. 46440
Axle Grease—See Grease, Axle	Lever and Pull, Sargent s60&10&105 Yankee Gong	Common7#%&10@7#%&10&5%	Sharp, 1 prongper lb, 1460446 Perkins' Blunt Toecents, # 3.485 Perkins' Sharp Toecents, # 3.415
	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,500,700,700,700,700,700,700,700,700,70	retains onerp roccents, \$ 3 415

July 21, 1904	THE IN	ON AGE.	5 E
Can Openers-See Openers, Can	Cold-	Anniston Cordage Co.: Braided Cotton.	Didwols, Molley
Cans, Milk- 8 10 gal.	Cold Chisels, good quanty lb. 13@15c Cold Chisels, fair qualitylb. 11@12c	Old Glory, Nos. 7 to 12	Tucker's Pat. Ala m Till No. 1, \$\psi\$ doz. \$18; No. 2, \$15; No. 3, \$12; No. 4, \$12
Illinois Pattern. \$1 50 2.00 2.25 each. lowa Pattern 2.35 2.50 each. 20 30 40 qts.	Chucken Chucken	Anni-ton Drab, Nos. 7 to 12 P 20 6	Drawing Knives-
20 30 40 qts. New York Patt'rn1.65 2.40 2.75 each.	Beach Pat., each \$8.00	Nos. 7 to 12 23e.	See Knizes, Drawing. Drills and Drill Stocks—
New York Patt'rn1.65 2.40 2.75 each. Balt:more Patt'rn 1.80 2.00 each.	Empire	Eddystone Braided Cotton .No. 6 \$ 5 27¢ Harmony Cable Laid Italian. No. 7 to	Common Blacksmiths' Drill each
Cans, Oil— Burtalo Family Oil Cans:	Skinner Patent Chucks: Independent Lathe Chucks	10 Peerless:	\$1.50@\$1.7 Breast, Millers Falls
Buitalo Family Oil Cans: 3 10 gal, \$48.00 (1.20 129.60 gro., net	Universal50%	Cable Laid Italian	Breast, P., S. & W
Caps-Percussion-	Drill Chucks, New Model	Cable Laid India	J. hns. h's Autom. 1: Drills Nos. 2 and
Caps—Percussion— Eley's B. B	Drill Chucks, Standard	Braided India	Johnson's Drill Points 1634 5410
F. Lper M 40 @450	Combination 50% Drill Chucks, New Model 50% Drill Chucks Standard 50% Drill Chucks Skinner Patent, 0, 1, 2, 49% Drill Chucks, Skinner Patent, 8, 4, 5, 6, 7, 8 Drill Chucks, Skinner Patent, 8, 4, 5, 6, 7, 8 Drill Chucks, Positive Drive 50% Planer Chucks 25% Face Plate Javes 40%	Braided, Drab Cotton \$\psi\$ 36\square\$ Braided, Italian Hemp. \$\psi\$ 36 Braided, Linen \$\psi\$ 53\epsilon\$ Braided, White Cotton or Spot. \$\psi\$ 33\epsilon\$	Johnson's Drill Points
G. E Der M 50605 to	Drill Chucks, Positive Drive30%	Braided, White Cotton or Spot. 336	Detelor Westerle
Musketper M 62@63:	Face Plate Jaws 40%	Massachusetts, White	Ratchet, Whitney's, P.S. & W50 Whitney's Hand Drill, No. 1, \$10.00;
Berdan Primers, \$3.00 per M20&58 B. L. Capa (Sturtevant Shells)	Standard Tool Co.: Improved Drill Chuck	No. 6 cords, 1¢ extra.	
\$2.00 per M	Union Mfg. Co.: Combination	Silver Lake: A quality, Drab,	Rit Stock 624 10G 604 104 10
Cartridges-	Czar Drill	B quality, White,	Bit Stock
Blank Cartridges:	Geared Scroll	Silver Lake	60&10@60&10&5 Drivers, Screw-
88 C. F., \$5.50		Linen,	Screw Driver Bits per doz 46@66
\$8 C, F., \$7.00	Universal	Wire, Picture— List Oct., '00. 85&10&10@85&10&10&5%	Balaey's Screw Holder and Driver, \$ do 2's-inch, \$6; 4-in., \$7.50 6-in., \$0, 40 Buck Bros' Screw Driver Bits
B. B. Caps, Con., Ball Swga\$1 30		Cradles-	
B. B. Caps, Round Ball \$1,49 Central Fire	Lathe Chucks. 50% Little Giant Auxiliary Drill. 50% Little Giant Double Grip Drill. 50% Little Giant Drill, Improve 1 50%	Grain	Edson. 66 Fray's Hol. H'dle Sets, No. 3, \$12.00 56 Gay's Double Action Ratchet. 5 Goodell's Auto50&10&10@50&10&10&
Target and Sporting Rifle15&5% Primed Suells and Bullets15&10%	Little Giant Double Grip Drill50%	White Round Crayons, gross.5%@6c	Gay's Double Action Ratchet
Rim Fire Sporting	Oneida Drill	Cases, 100 gro., \$4.00, at factory, D. M. Steward Mfg. Co.	Hurwood
Rim Fire Sporting	-:	Jumbo Crayonsgr. \$3.50	Goodell's Autoouerlogiouerlogio Hurwood Mayhew's Black Handle 46 Mayhew's Monarch 40& 16 Hillers Falis, Nos. 20 and 21 22 32 48 Millers Falis, Nos. 11, 12, 41 42 52 46 New Furn 66 New England Specialty Oo. 56
Casters— Bed70@70&10%	Adjustable, Hammers'20@20&5%	Jumbo Crayonsgr. 83.50 Metal Workers' Crayons.gr. 82.50 Soapstone Pencils, round, flat	Millers Falls, Nos. 20 and 21
Plate	Cabinet, Sargent's 50&105 Carriage Makers', P., S. & W. Co	or squaregr.\$1.50	Never Turn
Printdesphid	Carriage Makers' Sargent's60\$	Railroad Crayons (compo-	Configuration Co. a.
Jem (Holler Bearing)	Linemans' Utica Drop Forge & Tool Co40% Saw Clamps, see Vises, Saw Filers'.		Nos. 1 and 00
martin's Patent (Phoenix)	Cleaners, Drain-	Red, Blue, Green \$ gro. \$6.50 Black \$ gro. \$4.00 See also Chalk.	Smith & Hemenway Co
Standard Ball Bearing45% Fucker's Patent low list	Iwan's Champion, Adjustable5% Iwan's Champion, Stationary40%	Crooks, Shepherds'-	Stanley 8 R. & L. Co.'s:
Yale (Double Wheel) low list45%	Cidowalk-	Fort Madison, Heavy # dos. \$7.00 Fort Madison, Light # dos. \$6.50	
Cattle Leaders— See Leaders. Cattle.	Star Socket, All Steel	Crow Bars—See Bars, Crow.	Swan's: Nos. 65 to 68
Chain, Coll-	W. & C. Shanir, All steel, F d z., 71/2 12.	Cultivators-	No. 40
American 4 6-16 94 7-16 14 9-16 8.00 6.30 k.15 3.75 3.60 3.50 3.46 44 94 74 1 to 134 inch. 13) 3.25 3.50 3.15 per 100 lb.	\$3.00; 8 in., \$3.25. Cleavers, Butchers'-	7leter Garden50%	Eave Trough, Calvanize
8.00 5.30 4.15 5.75 5.60 5.50 5.45 84 34 34 1 to 134 inch.	Foster Bros	Cutlery, Table-	Territory. L. C. L. 80d 10 d 1 80d 10 d 1
33) 3,25 3,50 3.15 per 100 lb.	Foster Bros	International Silver Company: No. 12 Medium Knives, 1847. # doz. \$3.50 Star, Eagle, Rogers & Hamilton and	B. Eastern
German Coll	La & L. J. Willie	Wm. Rogers & Son doz. \$2.50	Central
Halter Chains60&10@60&10&10% German Paltern Halter Chains, list	Clippers— Calcago Flexible Shaft Company:	Wm. Rogers & Son	S. Western
Tails 01 107 00 610 610 0	'93 Chicago Horse	H. H. Mayhew Co	S. Western. 75&10&1 Terms, 9% for cash. Factory shipmen generally delivered. See also Conductor Pipe and Elbow
Trace, Wagon, &c	buth Century Horse, each, \$5.00 20%	Smith & Hemenway Co	See also Conductor Pipe and Elbow
Praces, Western Standard: 100 pair	Chicago Belt\$90.00	Meat and Food-	Elbows and Shoes-
614-6-2, Straight, with ring \$24.50	Finger Nail Clippers-	American30%	Factory shipments
Cow Ties	Calcago Floxible Shaft Company: 93 chi: ago Horse. \$8.75 \ \text{\$\frac{1}{2}\$} \$\frac{	Rach\$5 \$7 \$10 \$25 \$50 \$60	Emery, Turkish-
Add 3¢ per pair for Hooks. Twist Traces 3¢ per pair higher than	Clips, Axle-	Nos 5 10 19 29 32	Kegs
Straight Link. Trace, Wagon and Fancy Chains	Eagle 5-18 and % inch75@75&10% Norway, 5-16 and % nch60&10@70%	Each \$2 \$3 \$2.75 \$4.50 \$6 Dixon's \$\psi\$ dos	% Rega lb. 514e 514e 324
60£5@60£10&5%	Cloth and Netting, Wire	American 30%	Regs
Miscellaneous - Jack Chain, list July 10, 193 :	-See Wire, &c.	14.00	10-lh.cans.less than 10.10c 10c 8c Norm.—In lots 1 o 3 tons a discount of 10% is given.
Iron	Hardware list:	Nos. 305 310 312 330 328	Eutonotone Lamon tula
Brass	Compression, Plain Bibbs, Globe, Kerosene, Racking, &c., Cocks.	N. E Food Choppers40%	Extractors, Lemon Juic
Fal. Pump Chainlb 434@434c	70&10@75%	Russwin Food No. 1, \$24 00; No. 2, \$27.00 45&10&10%	asteners, Blind-
Breast	Coffee Mills—See Mills, Coffee.	45&10&10%	Zimmerman's50&10
Hoal 40897	Collars, Dog-	Sterling	Cord and Weight-
Rein	Brass, Walter B. Stevens & Sou's list. 40% Embossed, Gilt, Walter B. Stevens &	Woodruff's, # dos30&10@40% Nos	Ives
Breast	Son's list	\$15.00 \$18.00 Enterprise Beef Shavers	Faucets—Cork Lined
Breast	Combs, Curry-	Slaw and Kraut-	Metallic K. v., Leather Lind70@70&10 Red Cedar
Rein	MetalStamping Co	Henry Disston & Sons: Slaw, Corn Grater, &c	Petroleum
Am. Coll and Halters10@40&5%	Covert's Saddlery Works	Slaw, Corn Grater, &c	B. & L. B. Co.: Metal Key
Am. Cow Ties	Compasses, Dividers, &c. Ordinary Goods75&5@75&10% Bemis & Call Hdw. & Tool Co.:	J. M. Mast Mfg. Co.: Slaw Cutters, 1 Knife	Star
Niagara Coil and Halter : 45@50&5% Niagara Cow Ties	Bemis & Call Hdw. & Tool Co.:	Combined Slaw Cutter and Corn	John Sommer's Peerless Tin Key 40 John Sommer's Boss Tin Key 50
Vira Goods Co.:	Dividers. 65% Calipers, Double. 65% Calipers, Inside or Outside. 65% Calipers, Wing. 60%	Grater	John Sommer's Victor Metal Key. 50 % 1 John Sommer's Duplex Metal Key.
Dog Chain70&10% Universal Dbi-Jointed Chain50%	Calipers, Wing	Kraut Cutters	John Sommer's Diamond Lock4 John Sommer's I. X. L. Cork Lined5 John Sommer's Reliable Cork Lined
Chaik-(From Jobbers.) Carpenters' Bluegro. 40c	Compasses	Kraut Cutters	
'arpenters', Redgro. 35: 'arpenters', Whitegro. 30c	T. C. L. to Dealers!	Tobacco-	John Sommer's Chicago Cork Lined. 66 John Sommer's O. K. Cork Lined 57 Lohn Soumer's No. Brand Cork
See also Crayons.	A. LABSTELLS. COULTYSTS (DCC2737)	All Iron, Cheandox #4.25@ch 50	John Sommer & No Dr Bd, Cedar
Chacks Door-	B. Eestern .75&1)&31/4 75&71/4%	Enterprise	John Sommer's Perfection Cedar
ardsley's	Central 7567148 758 Southern 706108 70658 S. Westerm 7067148 7062548 Terms. 90 days. 75 cash, 10 days. Fuctory shipments generally delivered.	Sargent's No 12 and 21	Improved, % and % inch
Chests Tool-	8, Western. 70@7/4% 70@2/4%	Washer- Appleton's, # doc. \$16.0050&10&10\$	Self Measuring: Enterprise, # dos. \$66.0040&1
merican Tool Chest Co.:	shipments generally delivered. See also Eave Troughs.		Lane's, W dos. \$36.0040&1
merican Tool Chest Co.: Boys' Chests, with Tools	Coolers, Water-	Diggers, Post Hole, &c	Felice Plates-
	Gal, each. 3 3 4 6 8 Labrador \$1.30 \$1.50 \$1.50 \$2.10 2.70	Dalbey Post Hole Augerper doz., \$9.00 [wan's Improved Post Hole Auger, 40&5%	See Plates, Felloc.
Machinists and f.n. Fitters Chest		Iwan's Vaughan Pattern Post Hole	Files—Domestic— List revised Nov. 1, 1899,
Farmers', Carpenters', etc., Chests, with Tools	Iceland, ea. \$1.80 \$2.10 2.40 \$3.00 Gal 2 3 4 6 8 Galv. Lined Ea. \$1.85 \$2.00 \$2.2 \$2.20 \$2.90	Augers, # doz	Best Brands
Chargement of Co. s Machinists' Tool	25%		Lower Grade75&10@75&10@80&10 Imported—
Ches s335&10%		Kohler's Universal 3 dog, \$15.00	Stube' Tapers, Stube' list, July 25,
Chisels-	Ga,v. Lined side handles		107 Tupers, Stude full, July 25,
Chisels— locket Framing and Firmer tandard List	Gal. 2 82.15 \$2.40 \$3.80 \$4,15,.25	Kohler's Hercules # doz. \$12.6)	# (**** ***** * * * * * * * * * * * * *
Chisels— socket Framing and Firmer tandard List	Gal. \$2.05 \$2.15 \$2.40 \$3.00 \$4.1525% Coopers' Tools—	Wats Spits madde Fost foliagers	
Chisels— Socket Framing and Firmer tandard List	Gal. 2 84.95 82.15 82.40 \$8.80 \$4.15,.25; Coppers' Tools— See Tools, Coopers'.	Kohler's Little Glant. # drs. \$12.65 Kohler's Hercules. # doz. \$10.00 Kohler's Invincible. # doz. \$9.60 Kohler's Rival. # doz. \$8.5 Kohler's Pioneer. # doz. \$7.50 Never Break Park Hole Discress # doz.	
Chisels— socket Framing and Firmer tandard List	Gal. \$1.95 \$2.15 \$2.40 \$3.80 \$4.15255 Cocpers' Tools— See Tools, Coopers'. Cord— Sash—	Kohler's Little (Hant. # drs. # 12.6) Kohler's Hercules # doz. #10.00 Kohler's Invincible # doz. #9.60 Kohler's Rival. # doz. #9.50 Kohler's Pioneer # doz. #7.50 Never-Break Post Hole Diggers, # doz. #24.00	
Chisols— oocket Framing and Firmer tandard List	Gal. \$1.95 \$2.15 \$2.40 \$3.80 \$4.15255 Cocpers' Tools— See Tools, Coopers'. Cord— Sash—	Kohler's Little Glant. # drx, # 12.63 Kohler's Hercules. # dox, #10.00 Kohler's Invincible. # dox, #9.00 Koh'er's Rival. # dox, #9.76 Kohler's Pioneer. # dox. #7.50 Never-Break Post Hole Diggers, # dox. #24.00	
Chisels— Socket Framing and Firmer Standard List	Gal. \$1.95 \$2.15 \$2.40 \$1.90 \$4.15,.255 Cocpers' Tools— See Tools, Coopers'. Cord— Sash— Braided, Drab	Kohler's Pioneer. P dos. \$7.50 Never-Break Post Holo Diggers, \$\psi\$ dos. \$24.00	197 300 Fixtures, Crindstone
Chisels Socket Framing and Firmer tandard List	Gal. \$1.95 \$2.15 \$2.40 \$1.90 \$4.15,.255 Cocpers' Tools— See Tools, Coopers'. Cord— Sash— Braided, Drab	Kohler's Pioneer. P dos. \$7.50 Never-Break Post Holo Diggers, \$\psi\$ dos. \$24.00	Fixtures, Crindstone
Chisols— cocket Framing and Firmer tandard List	Gal. \$1.5 \$2.15 \$2.40 \$1.90 \$4.15.,255 Coopers' Tools— See Tools, Coopers'. Cord— Sash— Braided, Drab	Kohler's Pioneer. P dos. \$7.50 Never-Break Post Holo Diggers, \$\psi\$ dos. \$24.00	Fixtures, Crindstone
Chisels— Socket Framing and Firmer Mandard List	Gal. \$1.95 \$2.15 \$2.40 \$3.90 \$4.15.255 Coopers' Tools— See Tools, Coopers'. Cord— Sash— Braided, Drab	Kohler's Little Clant. # dvs. #12.63 Kohler's Hercules. # doz. #10.00 Kohler's Invincible. # doz. #9.00 Kohler's Invincible. # doz. #9.70 Kohler's Rival. # doz. #9.70 Kohler's Pioneer. # doz. #7.50 Never-Break Post Holo Diggers, # doz. #2.400. #0.65 Samson. # dos. #34.00 255 Dividers—See Compusses. Doors Screen— Phillips', style F, % in. # doz. #10.50 rhillips', style F, % in. # doz. #10.50 rhillips', style XV, % in. # doz. #10.50 rhillips', x	

Foreign Principle Aug. 5, 1505, 1617 Mary of Princip and Principle Aug. 6, 1505, 1617 Mary of Princip and Principle Aug. 6, 1505, 1617 Mary of Princip and Principle Aug. 6, 1505, 1617 Mary of Princip and Principle Aug. 6, 1505, 1617 Mary of Princip and Principle Aug. 6, 1505, 1617 Mary of Princip and Principle Aug. 6, 1505, 1617 Mary of Princip and Princip
Sargent's C. S. New Idst.

	J. Bardsley Rardsley a Non-Checking Mortice	
	Floor Hinges	
	Bommer Bros.:	
	J. Bardsley s Non-Checking Mortise Floor Hinges. 45% Bardsley's Patent Checking. 15% Bommer Bros.: Bommer Ball Bring Floor Hinges40% Bom mer Spring Hinges. 40%	
	Bon mer Spring Hinges. 40% Bon mer Spring Hinges. 40% Chicago Spring Hinges. 25% Triple Ead Scring Hinges. 50% Chicago (Ball Bearing) Floor	
	Triple End String Hinges50%	
	Chicago (Ball Bearing) Floor 50% Garden City Engine House 25% Keenc's Saloon Door 25% Columbian Hdw. Co.: Aeme, Wr. Steel 30% Aeme, Brass 25% American 25% American 25%	
	Keene's Saloon Door	
	Acme, Wrt. Steel	
	Acme, Brass	
	Columbia, No. 14 9 gr. \$9.00 Columbia, No. 18 9 gr. \$25.00	
2	Columbian Edw. Co.: Acme, Wrt. Steel	
[AG]	Gem. new list	
8 0	Oxford, new list30%	
Extra 5@10% often given.	Matchless 1905 Matchless 1905 Matchless Plvot. 454 Shelby Spring Hinge Co: Chief Ball Bearing Floor Hinge. 505 Ohio Detachable Screen Door Hinge.	
76 0	Shelby Spring Hinge Co:	
100	Ohio Detachable Screen Door Hinge	
78.0	The stover Mfg. Co.:	
Sxt	Ideal, No. 16, Detachable, # gr#12.50 Ideal, No. 4 # gr, \$9.00	
-	The *tover Mfg. Co.: Ideal, No.16, Detachable, *gr#12,50 Ideal, No.4. *gr. \$9.00 New Idea No. 1. *gr. \$9.00 New Idea. Double Acting35% Van Wagoner: Ball Baering	
	Van Wagoner: Pall Hearing	
	Pall Hearing. 25% No 777 Sh't Steel Holdb'k. P gro. pr. 95 Wrought Iron Hinges— Strap and T Hinges. &c., list Mar.	
	Strap and T Hinges. &c., list Mar.	
	15, 1901: Light Strap Hinges 80456)	
	Light Strap Hinges80&75 Heavy Strap Hinges 80&20&10% Heavy T Hinges75&10&55 Heavy T Hinges75&10&55 Extra Heavy T Hinges75&50% Hinge Happs75%	
	Heavy T Hinges75&10&5%	
	Extra Heavy T Hinges 80d 10%	
	Hinge Hasps	
	Cor. Ex. Heavy T80ct 0	
	Seres Hook 6 to 12 in 1b. 3140	
	Screw Hook 6 to 12 in lb. 34c and Strap. 14 to 20 in lb. 3 c 22 to 36 in lb. 24c	
	1 Screic Liook and Eue:	
80	% to 1 inch	
0%	%-inch	
-0	Hitchers, Stall- Covert Mfg. Co., Stall Hitchers 355	
50	Hods. Coal-	
0%	15 16 17 18 inch. Galv. Open. \$2.50 2.75 3.00 3.25 % dog.	
5%	Galv. Open\$2.50 2.75 3.00 3.25 % doz. Jap. Open\$2.00 2.25 2.50 2.75 % doz. Galv. Fun'el.\$3.00 3.25 3.50 3.75 % doz. Jap. Funnel.\$2.50 2.75 3.00 3.25 % doz. Masons, Etc.— Cleveland Wire Spring Co.:	
	Jap. Funnel. \$2.50 2.75 3.00 3.25 \$ doz.	
5%	Masons, Etc	
0%	Steel Mortareach \$1.45 Steel Brickeach \$1.10	
_	Hoes- Eye-	
	Steel Brickeach \$1.10 Hoes— Eye— Scovil and Oval Pattern	
93	60&10@60&10&10% Grub, list Feb. 23, 1899	
	Handled-	
9	Aug. 1, 1899, List: Field and Garden	
	Smith's Patent	
Э,	Black Diamond70&10%	
0	Planters' 75&121/4	
	Cotton Channer 70&10&10%	
×	Wieding Hoes 6676415%	
15 15 15	Malleable Weeders 66% 15%	
4	Ft. Madison Cotton Hoe70&10&10%	
*	per dos 70&10%	
	Regular Weight % doz. 6%	
5	Ft, Madison Sprouting Hoe. # doz. 50%	
N N N	Ft. Madison Dixie Tobacco Hoe	
5	Warren Hoe	
2	W. & C. Ivanhoe	
***	Field and Garden 70¢108 Smith's Patent 508 Meadow & Rhode Island 75% Black Diamond 70¢106 Mortar and Street 70¢10¢109 Planters 75¢1296 Cotton (hopper 75¢1296 Cotton (hopper 75¢1296 Weding Hoes 66%¢156 Malleable Weeders 66%¢156 Malleable Weeders 66%¢156 Ft. Madison Cotton Hoe. 70¢10&10 Ft. Madison Dattock Hoes: 70¢10&10 Ft. Madison Dattock Hoes: 8 dos. 60% Ft. Madison Dattock Hoes: 8 dos. 60% Ft. Madison Dattock Hoes: 70¢10 Ft. Madison Date 70¢10 Ft. Madis	
	W. & C. Lightning Shuffle Hoe, \$\Psi\$ doz. \$4.85	
	Hoisting Apparatus- See Machines, Hoisting.	
8	Holders Bit	
8 8	Holders-Bit-Angular, # doz. \$24.00	
8	Full Dire	
5	File and Tool	
	Nicholson File Holders and File Han- dies	
	HOURS	
0	Cast Iron-	
5	Bird Cage, Sargent's List	
0	Clothes Line, Reading List	
0	Coat and Hat, Sargent's List. 50@50&104	
5	CoatandHat Reading	
5	Coat and Hat, Wrightsville	
5	Harness, Reading List50&10%	
5	Cast Iron— Bird Cage, Reading	
	Belt	
	Atlas, Coat and Hat:	
	Single Cases	
0	Columbian Hdw Co. Gem	
i	Belt 80d-% Wire C. & H. Hooks 75@75&10% Atlas, Coat and Hat: 75@75&10% Single Cases. 70% 10 Case Lots 70&10% Columbian Hdw Co. Gem 64c10% Parker Wire Goods Co.: Kine 76c10% Van Wagoner, Coat and Hat 76c6 Western W. G. Co. Molding 75%	
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Wire Goods Co: Aome	Covert Mfg. Co	Brass Head45 .60 .70 .95 1.00 gro. Por. Head 1.10 1.10 1.10 gro. Nippers, See Pliers and Nippers.	Garnet Paper and Cloth
Czar. 65% V Brace. 704 10% Wrought Iron— Box, 6 in., per dox. \$1.00; 3 in., \$1.25; 10 in., \$2.50. Cotton. dox. \$1.06@1.25 Wrought Staples, Hooks, &c.— See Wrought Goods.	Wire Clothes, Nos 18 19 20 100 feet	Brass Head	Advance Apple-
Wrought Iron— Box, 6 in., per dox, \$1.00; 8 in., \$1.25; 10 in., \$2.50. Cotton	Wire Clothes, Nos 18 19 20 100 feet\$2.20 2.00 1.65 75 feet\$1.80 1.70 1.30	Nippers, See Pliers and Nippers.	Baldwin # doz. \$5.00
Wrought Iron— Box, 6 in., per dox, \$1.00; 8 in., \$1.25; 10 in., \$2.50. Cotton	75 feet\$1.80 1.70 1.30		-DOHARZA LIDDFOVED
Cotton	Dainson Coruage Works:	Nuts- Cold Punched: Off list.	Dalay # doz. \$4.00 Dandyeach \$7.50
Wrought Staples, Hooks, &c.— See Wrought Goods.	Solid Braided Chalk, No. 0 to 3 40% Silver Lake Braided Chalk, No. 0, \$6,00; No. 1, \$6,50; No. 2, \$2,00; No. 2, \$7,50	Mfrs. or U. S. Standard. Square, plain	Family Bay State. # doz. \$15.00 Improved Bay State # doz. \$36.00
	# gr	Hexagon, plain	Daily
Hooks, Hench, see Stops. Bench.	Cotton, No. 3½, \$1.50; No. 4 \$2.00; No. 4½, \$2.50; Colors, No. 3½, \$1.75; No. 4,	Hot Pressed:	Reading 72
\$6.00; Heavy, \$6.50	# gr 20% Masons 'Lines, Shade Cord, &c.: White Cotton, No. 34, 81.50; No. 4 82.00; No 45, 82.25; No. 44, 82.75; Linen, No. 35, 82.25; No. 4, 82.275; Linen, No. 35, 82.50; No. 4, 82.50; No. 4, 82.50; No. 4, 83.50; No. 4, 84.50; No. 400; Tent and Awning Lines; No. 5, White Cotton, 87.50; Dept. Cotton 85.50; 20%	Mfrs., U. S. or Nar, Gauge Stan'd. Square Blank	Turn Table '98
\$6.00; Heavy, \$6.50 \$7assNos. 1 2 3 4 Best\$1.50 1.75 2.00 Common\$1.30 1.30 1.40 1.50 Potato and Manure	Cotton, \$7.50; Drah Cotton, \$8.50;	Square Tapped\$5.80 Hexagon Tapped\$6.30	
THE HEAD TO A STATE OF THE PARTY OF THE PART	80 ft., \$3.25; 70 ft., \$3.75; 75 ft., \$4.00; 80 ft., \$4.25; 90 ft., \$4.75; 100 ft., \$5.2520%		Saratoga. # doz. \$7.00 White Mountain. # doz. \$6.00 Picks and Mattocks—
Hooks and Eyes:	\$21.00: Acme \$18.00: Alabama \$16.00:	Best or Governmentlb. 61/60	List Feb. 23, 1899 70 & 5 @ 70 & 109
Malleable Iron 70&5@70&10%	Empire, \$17.00; Advance, \$14.00; Orl-	Navy	Pinking Irons— See Irons, Pinking.
Overt Saddlery Works' Self Locking Gate and Door Hook	\$12.50; Chicago, \$11.50; Standard, \$10.00; Columbia. \$8.50.	. In carload lots 4c lb. off f.o.b. New York.	Pins— Escutcheon— Brass
ench Hooks—See Bench Stops. Corn Hooks—See Knives. Corn.	Cabinet Locks 331/4@331/4@71/4%	Oll Tanks—See Tanks, Oll.	Pipe. Cast Iron Soil-
Horse Nails—See Nails, Horse	Door Locks, Latches, &c	Brass and Copper	Pipe, Cast Iron Soil— Standard, 2-6 in
Horse Nails—See Nails, Horse Horseshoes— See Shoes, Horse.	Reading Hardware Co	Tin or Steel	Fittings
Hose Rubber	Bargent & Co	Chase or Paragon: Brass and Copper	Pipe, Merchant, Steel Carload Lots, f.o.b, Pittsburgh. Galva
Competition	Elevator-	Zinc	Merchant Pipe. Black. nixed
*-ply standaraft. 834@ 9 c	Padlocks-	Zinc. 65&10% Malleable, Hammers' Improved, No. 1 \$3.60; No. 3, \$4; No. 3, \$4.40 \$ dos. 20% Malleable, Hammers' Old Pattern.	14 inch
k-ply extra	Wrought Iron	same list	7 to 12 inch
Low Grade	Ives' Patent .:	Isalifold Olieta deca	Pipe, Sewer— Jobbers' Prices— Standard Pipe and Fittings, 2 to 24 in.
rons- Sad-	Bronze and Brass	Openers- Can-	New York and New Jersey701
3. B. Sad Ironslb. 34@34c Thinese Laundrylb. 144@5c	Iron. 62465 Wrought Bronze and Brass. 55% WroughtSteel. 55%	Frenchdoz. 35c Iron Handledoz. 25@27c Sprague, Iron Hdleper doz. 35@40c	Maryland, Delaware, East Penn. 73% West Penn and West Va
Thinese Sad	resulting	Sardine Scissors doz. \$1.75@.83.00	Virginia
Nos 50 55 60 65 JapdTope 62 59 72 6911 TindTops 65 62 75 72	Machines- Boring- Com. Upright, Without Augers \$2.00	National	Indiana
TindTops 65 62 75 72 New England Pressing.lb 334@4c	Com. Angular, Without Augers .\$2.25	Nickel Plateper doz., \$2.00 Silver Plateper doz., \$4.00	Pipe, Stove— Edwards' Nested Stove Pipe:
Pinking-	R.& E. Mfg. Co.: Upright. Angular. Improved No. 3.74.95 No. 1.85.00 Improved No. 4. 3.75 No. 9. 3.88 Improved No. 5. 2.75		
Cinking Ironsdox. 50@60c Soldering— coldering Coppers \$14 and \$19@20c	Improved No. 4, 3.75 No. 2, 3,38 Improved No. 5, 2,75 Improved No. 5, 2,75	Packing- Asbestos Packing, Wick and Rope,	5 in., per 100 joints \$7.50 \$8.50 6 in., per 100 joints 8.00 9.00 7 in., per 100 joints 9.00 10.00
Jacks Wagon-	Improved No. 5, 2,75 Jennings'No. 4, 3,15 No. 1, 3,50 Millers' Falls	Rubber- 145 @ 15c lb.	Planes and Plane Irons— Wood Planes— Bench, First quality 40ct 5@40ct 10st
	Bneil's, Rice's Pat. 2.50 2.75 Corking— Retsinger Invincible Hand Power	Sheet, C. I. .8@10c Sheet, C. O. S. .9@13c Sheet, C. B. S. .10@14c Sheet, Pure Gum .50@65c	Bench First quality 1005@10010
Steel overt's Saddlery Works':	Fence— Williams Fence Machineseach, \$5.50	Sheet, C. B. S	Bench, Second qual
Daisy 60&10g Victor 60&10g ockport 50g ane sSteel 30&10g	Hoisting-	Jenkins' Standard, F B 80#35@25&5%	Charle Stanborg Co.
	Moore's Hand Hoist, with Lock Brake, 20%	Miscellaneous— American Packing7@10c lb.	Chapm-Steeles Co Bench, First Quality
rass, Spun, Plain	Ice Cutting— Chandler's15&10% Washing—	Cotton Packing	Toy and German
		Jute	Ohlo Tool Co.: Bench, First Quality
Knives- Butcher, Kitchen, &c oster Bros.' Butcher, &c	Boss No. 1; Boss Rotary\$57.00 Boss No. 7; Dietz Rotary\$60.00 Champion Rotary; Banner No. 1. \$54.00	Pails— Creamery 8. 2 Co., with gauges No 1 96,45; No. 2, \$6.50 w dos.	Adjustable Wood Bottom
Wilkinson Shear & Cutlery Co 40&10%		No. 2, \$6.50 or dox. Galvanized—	Ivon Dianes-
	Standard Perfection	Price per dos. Quart 10 4 14	Bailey's (Stanley R. & L. Co)
**Superson of the state of the	Mallets- Hickory	Water, Regular . 1.50 1.78 2.00 Water, Heavy 2.75 3.00 3.25	Miscellaneous Planes (Stanley R. & L. Co.)
Yankee No. 9, \$1.15. Drawing—	Tinners', Hickory and Applewood	Fire, Rd, Bottom, 2.30 2.60 2.80 Well	Sargent's
radiey's	dos	Pans- Dripping-	Plane Irons— Wood Bench Plane Irons
hio Tool Co.'s	Elastic Steel (W.G. Co.)	Standard List60&10@60&10&5g	30&5@30&10\$
wan's	See Picks and Mattocks.	No. 1 2 3 4 3	Buck Bros
7atrous	Milk Cans-See Cans, Milk Mills- Coffee, etc	Per doz. \$0.85 1.00 1.10 1.30 1.00 Roasting and Baking—	Stanley R. & L. Co 20&10@20&10&10% Union
wan's Sickle Edge # dos. \$10.00 wan's Serrated # dog. \$10.00	Ruterprise Mfg. Co	Regal, S. S. & Co., W dom, Nos. 5, \$4.50; 10 \$5.25; 20, \$5.75; 30, \$6.25.	Planters, Corn, Hand. Kohler's Eclipse
Mincing—	Parker's Box and Side50&10@60% Swift, Lake Bros Co30%	Savory, # doz., net, Nos. 200, \$9.00; 400, \$15.00.	Diates
ightning # dox. \$6.50@7.00 wan's Sickle Edge # dox. \$1.0.00 wan's Serrated # dox. \$10.00 aine. # dox. \$8.50 Mincing # gro. \$18.00 Miscellaneous # gro. \$18.00	Mowers, Lawn- Net prices are generally quoted.	8implex, 7 gro.: No. 40 50 60 140 150 160 \$30,00 \$5,00 42,00 81,00 80,00 46,00	Felloe
'arriers'doz. \$3.00@3.25 Tostenholm's	Good	Paper-Building Paper-	Pliers and Nippers— Button Pliers
ase, 2%-inch, Birch, or Maple, Rubber tip, gro\$1.10@1.15	High Grade 4.25 4.50 4.75 5.00	Building Felt	Gas Burner, per doz., 5 in., \$1,25@ \$1.30; 6 in., \$1,45@\$1.50
	Great American 70%	Mill Board, roll, thicker than 1-16	Gas Pipe 7 8 10 13-in.
arriage, Jap, all sizes, gro. 100,45c oor, Mineral	Great American Ball Bearing, now 181, 70; Quaker City. 70; Pennsylvania Ox65; Pennsylvania, Jr., Ball Bearing 60; Pennsylvania Golf. 50; Pennsylvania Horse 83/565; Pennsylvania Pony 4085;	inch	Acme Nippers50@50&5% Bernard's:
ardsley's Wood Door, Shutter, &c15% leture, Sargent's60&10&10%	Pennsylvania, Jr., Ball Bearing	Poein Sixed Sheathing: 500 en #	Cutting Nippers
- See Relting Leather-	Pennsylvania Pony40&5%	Light vt., 25 lbs. to roll. \$0.40@0.45 Medium vt., 50 lbs. to roll. \$0.45@0.50 Heavy vt., 40 lbs. to roll. \$0.65@0.70	Parallel, Pliers
Ladders, Step Etc.— ane's Store	Style & A. Steel	Black Water Proof Sheathing, 500	American Button75&10
Ladies Melting Address of the Melting Address	Style E, High Wheel	Sq ft. 1 ply, 65c; 2 ply, 85c; 3 ply, \$1.10; 4 ply, \$1.25.	Cronk's
S. & W	Nalls-	to lb., ton	Combination and others
eading 603 argent's 45&103 Lanterns— Tubular— egular Tubular No.0.doz.\$4,35@4.76	Wire Nail: and Brads, Papered	Red Rope Roofing, 250 sq. feet per roll. \$1.75 NOTE.—These goods are often sold at	Stub's Pattern. 50% Combination and others. 33% Heller's Farriers' Nippers, Pincers. and Tools 40&10@40&10&10 P., S. & W. Tinners' Cutting Nippers, 30@30&105
4/ 6 A WOWELLY AVO. U GOZ. S/4.75(0).5.75	List July 20,1899 85&10&10@90% Hungarian, Finishing, Upholster-	delivered prices.	Swedish Side, End and Diagonal Cut-
inge Tubular.No. 0 doz. \$4.75@5.25 ther Styles40&10@40&10&5\$	ers', &c. See Tacks. Horse—	Tarred Paper. 1 ply (roll 300 sq.ft.),lon. \$52.50@35.50	ting Pliers. 50% Utica Drop Forge & Tool Co.: Pliers and Nippers, all kinds 40%
Bull's Eye Police—	No. 6 7 8 0 10	2 ply, roll 108 sq. ft	Blumbe and Lovele-
o, \$, \$ inch\$3.75@\$.00 Lasts and Stands Shoe— towell's Atlas, Maliable Iron50s	A. C. 25 29 22 21 21 40&56 C. B. K. 25 29 22 21 21 40 Anchor 29 21 20 19 18 40&56 Champi'in. 29 21 20 19 18 40&56 Coleman. 18 12 25 24 28 .50%	pey (role 300 ag.ft.), (om., 32.2.063.5.30 2 ply, roll 108 ag. ft	Plumbs and Levels
owell's Atlas, Mailable Iron50% lowell's Badger, Cast Iron50%	Coleman 18 12 12 11 11net Maud S 35 28 22 21 21	where prices are controlled by agreement	Chapin Stephens Co.; Plumbs and Levels
Latches— Thumb— oggin's Latches, withscrew.dx35@.0c	Maud S.	where prices are controlled by agreement between the manufacturers. In open territory much lower prices are current. R. R. M. Stone Surfaced 1 oofing (roll 100 of the 100 of th	Disston's Plumbs and Levels
oggin's Latches, with screw, dx35@40c	New P'tn'm 19 18 17 16 16	Sand and Emery-	33197510%
Leaders Cattle— malldoz. 55c; large, 60c	TOTAL STREET,		Stanley R. & L. Co 30&10@30&10&10%

Half Keg (19½ 3 bulk)	
## August Products P. dec.	60@60 €109
Points, Glaziera* ———————————————————————————————————	
Polita, Glaziera* 1.6, 26, 26, 26, 26, 26, 26, 26, 26, 26, 2	Can, Man
Section Continues Contin	
Pokes, Animal— P. Radion Hawkers— P. Bolloc Coods— Mans facturere Lets. South Frames—See Prof. 19. Polloc Coods— Mans facturere Lets. South Frames—See Prof. 19. Polloc Coods— Mans facturere Lets. South Frames—See Prof. 19. Prof. B. P. Hard Lets. Prof. B. Hard Lets. Prof. B. P. Hard Lets. Prof. B. P. Hard Lets. Prof. B. P. Hard Lets. Prof. B. Hard Lets. Prof. B. P. Hard Lets. Prof. B. Hard Lets	
Police Goods	
Manufacturery Lists.	
Manufacturery Lists.	s Sail.
Part	0 00
Part	50&10@60
Plumper and Lot, 97 Fairs — Pergrot. Company William Horizon. Company	50
Deck	* * * * * * * * * * * * * * * * * * *
### 18.13.00 ### While Silk, kp the case ### Back Staff (bw link) ### Back Staff (bw link) ### Back Staff (bw link) ### Back Eagle, burish per	
### 181.00	rks:
## Wynite Silk, is pt. caam. B ## OS	90&10&5
## Wynite Silk, is pt. caam. B ## OS	609
Black Aight Said See Common	
Black Aight Said See Common	50
Black Rid Parks, 5 6 cm. 1 6 cm. 5 6 c	35
Simple Silk, 5 & pall.	6, d100, 25
Simple Silic Sil	739. 8, 1,
Simple Silic Sil	25
Simple Silic Sil	35
Simple Silic Sil	25&10
Black Silk, by h [10]	35&5&105 30& 0
Poppers	10&2'9&10
Poppers	15&10
The country	nwa
Posts Steel Barn Door & C. Cast from Barn Door & C. Cast from Barn Door Plange Screen H./les for Rd. Groove Wheels: Steel Hicking Posts, each, \$1.30 \$1.00 \$2.00 \$30 feet. \$4.56	50
Posts Stoel Posts Post	t Saws35
Posts Stoel Posts Post	Saws. 509
Posts Steel Barn Door & C. Cast from Barn Door & C. Cast from Barn Door Plange Screen H./les for Rd. Groove Wheels: Steel Hicking Posts, each, \$1.30 \$1.00 \$2.00 \$30 feet. \$4.56	25@25&7% .85@8b&7%
Potato Parers See Parers Potato	25@25&7549 d
Potato Parers See Parers Potato	25@25&7145 .85@85&714
Potato Parers See Parers Potato	.40&10@50
Pote	Mfg. Co.'s
Powder-	
Powder-	
Fine Sporting, I to. each	
Fine Sporting, 1 to. each	
Ring's Bern-Smokeless:	
Reg (25 % bulk)	35&5&109 omplete
King '8 Smokeless: Bot Gun \$15.00 Lame' 5.87. \$\frac{10}{10} f. h.	35&5&109
King '8 Smokeless: Bot Gun \$15.00 Lame' 5.87. \$\frac{10}{10} f. h.	85&5&109 .35&5&109
Lane' Stay	
Half case 12 (18 cans blk7/25	15&:10j
Half case 12 (18 cans blk7/25	30& U&5
Presses— Fruit and Jelly— Enterprise Mfg. Co	
Enterprise Mfg. Co	401
2 qt, \$2.00; 4 qt., \$4.00; 10 qt., \$6.00 cach.	nt, \$18;
Morrill's No. 1, per dos. \$20.00	15&101
Pruning Mooks and Shears—See Shears. Pullors, Mail— Cyclops	
Shears—See Shears. Pullers, Nail— Cyclops. Dudly Improved Nail Puller	P doz. 89.00
Miner's Fails, No. 5, per dos. \$12.00 . 12	
Miner's Fails, No. 5, per dos. \$12.00 . 12	
SNACION Slowell's wrought brackets transfer Cotton Rope : - Lo. Union Platform, Plain.	be.dos#5,50
Pearson No. 1, Cyclone Spike Puller. With Tell Proper 1800 28c Trains Platform Chained	11.70@1.90
Pencan, # dos. 49.00. 40e tos Swett's P. L. B. Steel Rail, # 100 ft. \$3.00	Out.
Recarding Case Lots: No. : 8 (large) Secretary Com	407
Com	a 50r
No. 3 B (smail)	lint) 60°
Euraka	t)25@859 Counter.
Malleable From Garden 70d 10d Plain 5545d The Standard Portables	1g
Bullave Cingle Wheels Coreners Gotost	gon509
	\$2.00@2.8
Hay Fork, Swivel or Solid Eye Fort Radion 20 teeth 2 dee Covert Saddlery Works	2.60@2.85 5avy, \$4.56
	& L. Co)
Hot House dos \$0.70 \$0 \$1.25	
Side Garden, 14-tooth, P doz 22-98 Ivory	60&5&2169
Packle doz \$0.30 12 58 1.00 Rasps, Horse Stationers 100:10 100 Phillips Screen Frames 60.55	3004542161
Stowell's: Distor's	@602-53-91/c
Ceiling or End, Anti- "ici lon. 60&105 Heller Bros. 70&56/70×10×50 Dunb Waiter, Anti- "lon. 60&105 McCaffrey"s American Standardskille55 Dunb Waiter, Anti- "lon. 60&105 McCaffrey"s American Standardskille55 Recruite Light. 605 New Nicholson. 70&106/75 Recruite Light. 605 New Nicholson. 6065 Klondike Screens. 6045 Klondike Screens. 6045	960&5&2365 900&5&212
Blectric Light	2000/27

=	July 21, 1904
10% 10%	Screws-Bench and Ha
ash	Bench, Iron. doz. 1 in. \$2.50@1 118, \$3.00@3. z5: 114, \$3.50@1 Bench, Wood, Beech. doz. 30(Hand, Wood. B. Bilss Mfg. Co., Hand. 30@ Chapln-Stephens Co., Hand. 00@1 Ohio Tool Co., Bench and Hand. Coach, Lag and Hand Rag, Common Point, list Oct.
	Hand, Wood, Beechdoz. 300
ers	Chapin-Stephens Co., Hand
aw.	Coach, Lag and Hand H
	Coach and Lag. Gimlet Point, list Oct. 1, '99
	Hand Part 1:
50%	Jack Screws
60% &5% 50%	Millers Falls Millers Falls Roller
40%	Sargent50@5
.40%	Liet 7
10%	Flat or Round Head Brasso
&5%	Set (Iron or Start)
.50% .60%	Set (Iron or Steel) 78% Ext Sq. Hd. Cap 70% Idea. Hex. Hd. Cap 70% oft Rd. or Fillister Hd. Cap 65% give
45% 50%	Rd. or Fillister Hd. Cap 65% give
50% 35% 35%	Rd. or Fillister Hd. Cap 65% give Wood— List July 23, 1903. Manufacturers' printed discount Flat Head, Iron. 87\(\frac{1}{2}\)\(\frac{1}\)\(\frac{1}{2}\)\(\frac{1}{2}\)
25%	Round Head, Iron8714 & 10@
25%	Fiat Head, Brass
30% 25% 35%	Bound Head, Bronze 77/2610@
	Scroll Saws—See Saws, Scroll
10% 10%	
0% 0%	Full Polished Clipper \$4.25@\$5.0
Ore.	Clapper, Grain \$7.00@\$7.50 Weed and Project \$7.75@\$8.2
0% 0% 0%	Seeders- Raisin \$4.50@\$5.00
0%	Sets- Awl and Tool
N. X.	Grain. \$4.25@\$5.06 Grain. \$4.25@\$5.06 Grain. \$4.25@\$5.06 Grain. \$4.25@\$5.06 Grain. \$7.00@\$7.56 Weed and Bush \$7.75@\$8.2 Seeders— Raisin. \$5.5@\$5.06 Sets— Awl and Tool. \$5.00 Brad Awl and Tool Sets: Wood Hile., 10 Awls dos. \$2.00@\$2.56
388	L'ken's Sets. Awl and doz. \$2.50@2.50
1	No. 90, w dos. \$10.00 Tools:
	E. Jennings & Co.'s Model Tool
E B	Illers Falls Adj. Tool H'dls, No. 1.
	No. 1. \$7.50; No. 2 \$4.00; No. 2
Ft	Garden Tool Sets
	## Awl and Tool sets: ## Wood Holle., 10 Awls dos. \$2.00@ 2.25 ## Wood Holle., 10 Awls, 6 Tools ## Wood Holle., 10 Awls,
Ro	ound, Blk. and Pol., assorted \$.50
Oc Bu	tagon
Car Ma	nnon's Diamond Point, w gr. \$19.205
Sne Spr	H's Corrucated, Cup Pt. per gro. \$9.00 B
D	amond Knurled, Cup Pt., per gro.\$7.50 N
Afle	onte
Ge Tm	
Ad	terion
Bemi	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Hai Pla	mmer, new Pat
Disete	ing Hammer
Nos.	3 and 4 Cross Cut, \$20.63
No.	10 old Style, \$10.00
Giant Royal	Royal, Cross Cut 9 doz. 89,50
Parito	Positive. # doz. 85.0 Star
Sha	Shaving— aving sets, No. 30, per doz, \$24.00net by these Spoke— Star Cast
Sha	ives Spoke-
Wood.	doz 81.00@1.15 81
Chapin-s	Stephens Co 20@ 10&10&10 "D"
Cast Iro	Fl and F2
Good. Chean	\$18.00 18.00 20.00 gro. Sterling \$5.00 6.00 17.00 gro. Sn:
Straight Best or	Trimmers, &c.: 7.00 gro. Germo
Fair at	## A
Tailors'	Nickel
Heinisch's Wilkinson	Tailors' Shears 40@40&5% Covert's
Wilkinson	's Branch, Lawn and Border. Germa
Wilkinson'	s Sheep 1900 list. 50% les 2004 50% 2004 10 saides, Steel Blades, Berlin 2004 000 200 200 200 200 200 200 200 20
Steel Laid	Inners' Snips—Oneida Solid Sargent's
a sou Ha	adles, Steel Blades, Berlin South
	40@40&10% Scythe

I II (Water	THE
Heinisch's Snips. 150@3.75: 150@3.75: 150.30.3045 100.50.3045 100	Co.'s, 616 to

Pruning Shears 30,230&105 Cronk's Grape Shears od Rail Dission's Combined P	and Tools
Oct. 1. Disston's Combined P	runing Hook
. SUCESS LASSUUS Printing it	k, @ doz. \$12.00
John T. Henry Mfg. Co. Pruning Snears, all gra G06406/95% G06406/95% G1068065% 5.06406408 Tree Pruners	des mane
Grape	50&10@50&20
10@80&5% .50&10&10% .50&10&10% .50&50&5% .50@50&5%	
Sheaves—Slidir 50@50&5% Stowell's Anti-Friction. Patent Roller Hatfield's,	ng Door-
Reading	Sargent's list,
@50&10% Reading. R. & E. list. Wrightsville Hatfield Pati	
Extra Reading list	tter_
10c5 R. & E. list	50%
given. Shelle- Shelle-	50&10%
Brace Ch. I	Empty-
	and 12 gauge.
Magically Leader, N	65&5%
Blue Rival, New Climax Monarch, Defiance, Repe	gauge25&5% Challenge
Rival, 10,12, 13 and 20 go	ater Yellow
Scroll. 10 and 12 gauge.	New Rival
255.00 Expert, Metal Lined and	50 list)20%
2. 16 and 20 gauge	3314259
Shells, Loade	
Loaded with Black Powder Loaded with Smokeless	a-
Loaded um grade	Powder,
23.25 high grade. Robin Hood Smokeless	Powder.
22.60 Robin Hood, Low Brass	er: 50% 1045e W
Shoes, Horse, Mul	50&10&5% W
ool F. o. b., Pittsburg;	0, &0
fron. Steel per Burden's all sizes, & keg. Shot—	keg \$4.00 W
	keg 3.75 \$3,90 W
Drop, up to B, 25-lb. bag	\$1.61 Th
Brop, 18 to 8, 25-lb. bag Drop, B and larger, per 25-lb. Buck, 25-lb. bag Chilled, 25-lb. bag	bag\$1.85 Iro
Shovele	*********
76 010. 10, 196	1840%
Sieves and Sifters— Hunter's Imitation.gro. \$10.50	Fen ni
50 14216 Blued, S. S. Co	0@11.00 Pou
National Mfg. Co. :	\$14.40 Gran
No Nameper gr	0. \$12.00 Dick
413.20 413.20 413.20 Victor. Storman Mfg. Co.: Victor. Supprise. No. Name. Shaker Barler's Pat.) Flour Site Flour Site Sleves, Tin Rim	o. \$11 00 Foste
Sleves, Tin Rim -	St.
Mesh Perdozen. Black full size \$1.0 1.25 3. Plated, full size \$1.30 1.35 1.5 Black, scant \$6.5 1.6	20 St
Plated, full size . \$1.30 1.35 1.46 Black, scant . \$6.5 1.66	0 1.35 Black 0 1.45 Curtis
Mesh 18, Nested, doz. 10 and 12 Inch.	Garden Green Lightn
Nested, 10, 11 and 12 Inch. Mesh 18, Nested, doz	@1.05 Little (
	04-
Standard list	d-10x
Skeins Wagon-	Norton Less ti
Steel	£10% One gr
Noiseless States	Lamoil White i Green
Slaw Cutters—See Cutters.	ens Atra In No. 1 In No. 2 In
Slicers, Vegetable— Sterling No. 10, \$2.00	Balance
Snaps, Harness-	31/2
overt Mfg. Co.:	Chicago W Gem Cor
High Grade20&J&	Gem Cor Grit Gem Cori
Vankee.	Gem Core Gem Core Pike Mfg. C
Overt's Saddiery Works: 30&5&5	Arkansas Arkansas
dodel	Arkansas Lily White
elda 'ommunity	Rosy Red Washita S Washita S
Snaps, Harness Jerman. 40@40@5 Overt Mfg. Co.: 40@40@5 Derby High Grade 20&5& Jockey 1. 40 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Washita S Lily White
1the	Washita Si India Oil Si

IRON AGE.
40% Snips, Tinnere' Sage
ols- Carl Sliver Plated-
Good Quality
ton. Rogers & Hamil- Rogers & Bro., William Rogers & Hamil- Rogers & Bro., William Rogers & Hamil- Rogers & Bro., William Rogers & Rogers & Son. Miscellaneous— German Silvas German Silvas
Serman Silver
10% I Inned In
80% Lables per gro. 45@50c
Star (Coll)
Carriage, Wagon, &c. 14 in. and Wider: Per. Lo.
114 in. and Wider: Per. Lo. Black. Per. Lo. Half Bright,
Sprinklers, Lawn-
Philadelphia No. 1, \$\pi\$ doz. \$12; No. 2, \$15; No. 2, \$34 1. \$\pi\$ doz. \$12; No. 2, \$05
Nickel plated List Jan. 5, 1990. Steel and Iron 70&10@75&10% Rosewood tidl Try Square and T.
Nickel plated Last Jan. 5, 1900. Nickel plated Last Jan. 5, 1900. Nosewood tall Try Square and T. Bevels 60&10&10070% Iron Hdl. Try Squares and T. Bevels. Disston's Try Sq. and T. Bevels. Winterbottom's Try and Miter
Wood C. Lemon-
Common, gro., No. 0, \$5.25 N. P. P. Wood, Porcelain Lined P. P. P. P. Cheap Good Grade
Iron. Porcelain Lined doz. \$1.25 lots per doz. \$1.75
Barbed Blind. Electricians', Association lb. 6@81/c Car
nized Staples \$2.55 Galva- oultry Netting. Staples \$2.55
Steels, Butchere'-
Ch's
Stocks and Di30@30d10% Truni
rtis Reversible Ratchet Die Stock 25% Star W.
dnep blo stocks No. 1 25%
Scytha Standard Queen C
Scythe Stones— ago Wheel & Mfg. Co: Tapo Corundum, 10 inch, \$8.00 per on Ellery Scythe Stones: Tapo America Patent
gross or more # gro. \$0.00 Steet Chestern of it gross or more # gro. \$7.20 Chestern Mrg. Co. 1901 Hat: # gro \$4.00 Fiddy Ass # kDiamond S. S \$2 gro. \$12.00 Fiddy Steet Eddy Steet Colles \$4.00 Fiddy Steet Colles \$4.00 Fiddy Steet Colles \$4.00 Fiddy Steet Fiddy Steet Fidey Fidey Steet Fidey Fidey Fidey Steet Fidey Fide
gross or more # gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$1.00 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. S. \$ gro. \$7.50 per of 18 prod S. \$ gro. \$ gro. \$7.50 per of 18 prod S. \$ gro.
Oll Stones, &c. Wheel & Mfs. Co., 190; Hat.
Wheel & Mfg. Co., 190: list: Orundum Off, Double Grit. 50% Orundum Axe, Single or Double Orundum Silps. 55% Orundum Razor Hones. 55% K. Co. 190! Monitor,
5. OU. 1901 Her Outos

ners'-See Shears	55
d Forks-	Hindostan No. 1, Regular. # B Se Hindostan No. 1 Small # B 10e Axe Stones (all kinds) Turkey Oil Stones, ex. 5 to 8 in #B80e Queer Creek Stones, 4 to 8 in 20e Gueer Creek Stones, 4 to 8 in 20e Sand Stone 5.6 Belgian, German and Swaty Razor Hones 50%
Plated-	Turkey Oil Stones of Stone
· · · · 50 & 10 @ con se	Queer Creek Stones, 4 to Sin. 2006
Co	Belgian, German and Sw. 56
and Rogers& Hamil-	Natural Grit Carving Knife Hones,
Hamil- 10&10% 10&10% 10&10% 10&10% 10&10% 10&10% 10&10% 10&10%	Actural Grit Carving Knife Hones, 50% & 602. Quick Edge Pocket Knife Hones, Mounted Kitchen Sand 6 \$3.00
60&10%	Winds Edge Pocket Knife Hones, Wounted Kitchen Sand Stone, 9 doz. \$1.50
ineous_	Stoners- Cherry-
Co.: 60@60æ5%	Enterprise Cherry-
	Bo le S oppers Fro 1000
Iron-	Stops, Bench— Millers Falls. Morrill's. W dos. No. 1. \$16.00
per gro. 45@53c per gro. 90c@\$1.00	Morrill's, No. 2, \$12.50
	Door-
	Cuspin-Stephens Co
20%	hapin-Stephens Co
	Straps— Box—
agon, &c. 0	ary's Universal, case lots20&10&10%
	Street of Works
:	Combined nor and Tack Hammer
	and From Steel Pointsdoz. 55@60ccketdoz. 51.75- coelstor Stretcher and Tack Hammer Combined, per doz. \$620%
wn-	Stuffers, Sausage— terprise Mfg. Co
	Sweepers C3025%
0z. \$12; No. 2, Na. 30%	Weepers, Carpet—
M	Uditorium, Roller Bearing (26 in case), Nickel. Sirion, Roller Bearing (30 in case), Nickel. Sirion, Roller Bearing (30 in case), Nickel.
Jan. 5, 1900. M	case), Nickel ————————————————————————————————————
uare and T. M	Anishes, full Nickel
60&10&10@70% M	onarch, Roller Bearing, News, \$24.00
and T-Bevels, 10@10% 100 100 100 100 100 100 100 100 100	onarch, Roller Bearing, Jap'ned, \$22.00 ansparent, Roller Bearing, Jap'ned, \$20.00
&10@40&10&10% Mo	march Extra Roller Bearing
emon- Mo	narch Extra, Roller Bearing (17.
No. 0, \$5.25 Name of Sec. 50.	fional Queen, Fancy Veneers. \$33.00
dox. \$1.00 dozen	petual, Regular Bearings, Nkl.820.00
doz. \$1.25 lots:	lots; \$1 per dozen on five-dozen.
doz. \$1.76	men on twenty-five-dozen lots. \$2.50
list Carpe	1st Jan. 15, '99. 1st Tacks 90&30&10@ 1st Tacks 90&35@ 1st Tacks 90&35@ 1st Tacks 90&36@ 1st Tacks 90&36&10&5@ 1st Upholsterers' Tacks 1st Upholstere
d 10&10&10% Swede 5; Galva- Swede	3 Cut Tacks. 90&35@
per lb Gimp	Tacks Pod 45 & 10 & 5 @ \$
314 @ 01/- Tage 2	2000 1000 1000 1000 1000 1000 1000 1000
20-	sters and Railroad Tacks
	rian Nails 90&45&@10. \$ n and Patent Brads. \$
30@30&10% Trunk	and Clout Nails 800 100 50 x
Straight Stan III	and Clout Nails. 50¢10¢56\$ The above prices are for Weights.* An extra 55 is given. Weights. An extra 55 is given. Weights. Extra 10.65% on. Weights.
0@50&10% Standar Stook.25%	Weights and an extra 1023% on
25% Double 1	Miscellaneous— Pointed Tacks 90 c6 tens & 5%. to Brads, R. & E. Mfg. Co 's list No Natls, Wire.
50% Double 1 Steel Wir 25% 25% 25% 25%	Brads, R. & E. Mfg. Co 's list.
25g Tani	18, OII—
Emerald,	S. S. & Co. Bach.
Queen Cit	S. S. & Co
Tape	Measuring
Patent Le	Asses' Skin40d 10@ 50d
ro. 87.20 Steel Chestermo	m's
ro \$6.00 Eddy Asses	2 Strin
12.00 Eddy Steel.	Leather
19.00 Lower list 16.00 Lufkin's Ste 17.50 Lufkin's Me	t Leather
77.00 Lurkin's Me Teeth,	tallie
Theman	- 100 608 87.00
Tin Case	
uble Single Loop	ale—Steel Wire.
55% Monitor, Co	ale—Steel Wire, 1088 Head, Etc80 desta
See Shear	R. Tinnera' Co-
Tinware Stamped To	3-
See Shear Tinward Stamped, Japa very general	anned and Pieced, sold
Covert's Saddle	fety Pole-
Tire Ber	y at net prices. fety Pole— serv Works
ters, Tire.	Benders and Tipset
Tank-day policy or high a	

	_
Tools- Coopers'-	
L&I.J. White	
Stowell's Hay orks	
Simonds' Crescent	
See Lifters, Transom.	
Traps— Fly— Balloon, Globe or Acme	
Oneida Pattern75&10@75&10&5% Newnouse	
Mouse, Wood, Choker, doz. holes 8½@9c Mouse, Round or Square Wire	
Marty French Rat and Mouse Traps (Genuine): No.1, Rat, Each \$1.12\(\frac{1}{2}\); \(\textit{P}\) doz. \$12.00 No.3, Rat, \(\textit{P}\) doz. \$6.00; case of 50 No.3\(\textit{R}\), Rat, \(\textit{P}\) doz. \$4.75; case of 72	
No. 4, Mouse. # doz. \$3.50; case of 7 \$9.75 doz.	
No. 5, Mouse, @ doz. \$2.75; case of 150 \$2.25	
Wood's E1	-
Kohler's Steel Garden Trowels, 610. \$5.00 * gro. \$5.00 Never-Broak Steel Garden Trowels. gro. \$5.00 gro. \$5.00	
Woodrough & McParlin, Plastering, 25	
Trucks, Warehouse, &c.— B. & L. Block Co.: New York Pattern	
Grocery Frucks, Improved pattern w dos. \$18.50 Model Stove Trucks	
Galvanized, per doz. \$4.75 5.25 6,00	
Per doz, net. 83, 70 6, 50 7, 20 6, 50 7 20 8, 10 90 80 Per doz, net. 83, 70 6, 50 7, 20 6, 50 7 20 8, 10 Twine—Miscellaneous— Flax Twine— BC B. No. 9, ½4 and ½-lb. Balls 25c@26c No. 12, ½4 and ½ lb. halls 15c@26c	
No. 9, ¼ and ½-lb. Balls 22cg-24c No. 12, ¼ and ½-lb. balls 18cg-20c No. 18, ¼ and ½-lb. Balls 16cg-18c No. 38, ¼ and ½-lb. Balls 16cg-18c No. 38, ¼ and ½-lb. Balls 16cg-17c Challs Line, Cotton, ½-lb Balls	
Cotton Mops, 6, 9, 18 and 16 in, to doz	
according to quality18c@250 American 2-Ply Hemp, 14 and 14-10. Balls	

-	American 8 Ply Hemp, 1-lb. Balls.
	India 2-Ply Hemp, 14 and 14-lb. Balls (Spring Tvine)9c
	India 3-Ply Hemp, 1-lb. Balls9c India 3-Ply Hemp, 14-lb. Ralls 8c
	2, 3, 4 and 5-Ply Jute, 1/2-1b. Balls
	Mason Line, Linen, ¼-lb. Balls 166 No. 261 Mattress, ¼ and ½-lb Balls.57c Wool, 3 to 6 ply
	Vises-
	Solid Box 50&10@60%
	Parallel— Athol Machine Co:
	Simpson's Adjustable
	Columbian Hdw. Co40%
	Emmert Universal:
	Emmert Universal: Pattern Makers' No. 1
	Hollands':
	Lewis Tool Co. 20@30¢. Merrill's 20¢. Miller's Falls 60&10\$ Massey Vise Co.: Clincher 60\$
	Clincher
	Perfect 30% Lightning Grip 30% Parker's: Victor 20%25%
	Regulars20@25%
	Combination Pipe
	Smith & Hemenway Co.:
	Machinists
	Stephens'
	Disston's D 3 Clamp and Guide, W dog.
	\$30
	\$30. 255 Perfection Saw Cl. mps, \$4 doz. \$5 do Reading. 60% Wentworth's Kubber Jaw, Nos. 1, 2 and 3
	Massey Vise Co.:
	Lightning Grip
	Perfect
	Dismett & Vacios Combination Dine
	Vise. 60s Hollands Combination Pipe 60s Hollands Combination Pipe 60s60&55 Massey's Quick Action Pipe 60s 60s 87 Series 60s 60s
	Parker's Combination Pipe: 87 Series
	87 Series
	Wads-Price Per M.
	B E., 11 up
	D. E., O
1	F. E. 11 up 1.00 6
1	P. E., 8 1.50
	P. E., 7
1	
-	Cast Iron, Hollow- Stove Hollow Ware:
-	Enameled 55&10@6)% Ground60&10@65%
-	Btacks and Disse-

c	Flain or Unground 65&10@.70% Country Holloware per 100 lbs., \$2.50
	White Enameled Wave
ic ic	Maslin Kettles
e	Tinned and Turned
e	Spe also fors Grie.
ic ic	Enameled— Agate Nickel Steel Ware
ic	00@10%
	Iron Clad Ware
1%	Iron Clad Ware
1%	Each45c 80e 25c 65e
× ×	Each
00	Avery Kettles
50	Never break spiders and Griddies
15	Never Break Kettles
18	Solid Steel Kettles
1%	Pike afg. Co., Soanstone 40@40&10%
76	Solid Zine:
15	Red Star, family size, stationary
K	Warmers, Foot Pike 4g. Co. Spanstone 40@40&10s Wash boards 40@40&10s Crescent, family size, bent frame. 33.00 ited Star, family size, stationary protection
5%	Double Zinc Surface: Saginaw Globe, family size, stationary protector
1%	protector
14	Naiad, familysize, open back perfo-
1%	Saginaw Globe, family size, stationary protector \$2.65 Cable Cross, family size, stationary protector \$2.90 Single Zine Surface: Naiad, family size, open back perforated \$3.40 Saginaw Globe, protector, family size, ventilated back \$2.25 Brass Surface: Brass King, Single Surface, open back \$3.00
18	Brass Surface:
18	back
	No. 1001 Nickel Plate, Single Surface
15	Mashan Loothor Avia
00	Patent
)%	Solid
	Iron or Steel-
3%	Size bolt 5-16 36 36 36 34 34 Washers \$5,00 4,10 2.80 2.60 2.40 Inlots less than one keg add 34c per
-/-	In lots less than one keg add ½c per lb., 5-lb, boxes add ½c to list. Cast Wasners— Over ¼ inch, barrel lots, per lb1¼@2c
	Over 1/2 inch, barrel lots. per lb 13/4@2c
15	Waterers, Hog-
1% 1%	Improved Dewey. & doz
1%	Wedges— Oil Finish
1%	Weights- Hitching- Covert Mfg. Co
	Covert's Saddlery Works 602108
	Sash-
280	Per ton, f.o.b. factory: Eastern District
8. 7	Western, Central and Southern Districts market unsettled,
5	prices ranging from \$17 50@ 19 00
	Wheels, Well- 8-in. \$1.4 @1.80; 10-in., \$2.00@2.25;
15	12-11. 32. 10(02.00. 14-11. 34.00(04.20)
	Wire and Wire Goods- Bright and Annealed:
	6 to 9
%	6 to 9
	2. 1.0 00 10t 10t 1/2(good: 2/2)

-	
1	Calvanized:
1	Calvanized:
	19 to 26
	27 to 36
1	6 to 9
1	10 to 18
	6 109
	6 to 14
	19 to 26
	27 to 36
1	Spools. 70@.70&10\$
1	Brass & Copper on Spools 60 d 10%
	Copper, list Feb. 26, '96
1	Cast Steel Wire
1	Spools. Spools. Brass & Copper on Spools80@60&108 Brass, list Feb. 26, '96,
	Bright Will Goods
	List June 24, 1903. 90&10@90&10&10%
1	Wire Cloth and Netting-
1	Galvanized Wire Netting
	80& 10@80&10&5% Painted Screen Cloth, per 100 ft.\$1.25
1	Standara Galv. Hardware Grade:
	Nos. 2, 2% and 3 Mesh, sq. ft 3c Nos. 4 and 5 Mesh, sq. ft34c
	No. 6 M. sh, sq ft
1	No. & Mesh, sq ft
1	Wire Barb-See Trade Report.
	Wrenches— Agricultural75&10@75&10&6%
1	Alligator
	Drop Forged S
)	Acme
	Bull Dog70%
1	Adjustable S
1	Adjustable S Pipe40% Brigg's Pattern30&10%
5	Combination Black40&55
	Merrick's Fattern50%
	No. 3 Pipe, Bright55% Boardman's
,	Coes' Genuine Knife Hdl 40&10&5&5%
-	Coes' Genut e Key Model 40&10&5&5%
	Coes' "Mechanics'40&10&10&5&5% Donohue's Engineer40&104
2	Bunis & Cali's: Adjustable \$
	Dudly Adjustable Pipe
)	Section Sect
	Elgin Monkey Wrench Pipe Jaws 33144
	Hercules
	Gem Pocket
i	Less than case lots
	Solid Handles, P.S. & W 50@50&5%
,	Stillson
,	Wrought Goods— Staples, Hooks, &c., list March 17
	'9290@90&5 %
	Yokes Neck-Covert Saddlery Works, Trimmed70% Covert Saddlery Works, Neck Yoke Centers
1	Covert Saddlery Works, Neck Yoke Centers70%
	Yokes, Ox. and Ox Bows-
	Yokes. Ox, and Ox Bows- Fort Madison's Farmers & Freighters list net
6	Zinc-
6	Sheet per 100 lbs. \$6 25@6 50
1	A COMPANY AND A COMPANY OF THE PARK OF THE

PAINTS, OILS AND COLORS.

White Lead, Zinc, &c.
Willie Load, Zille, acc.
Lead, English white, in Oil 9140 914
Lead, American White, in Oil:
Lots of 500 B or over 616
Lots less than 500 b @ 7
In Barrels 6
In Barrels
pails, add to keg price 3 16
pails, add to keg price
polls add to kee pelse
pails, add to keg price
control time add to be profes
sorted tins, add to keg price @ 14
Lead, American, Terms: For lots 12 tons
and over 16 rebate ; and 2% for cash
if paid in 15 days from date of lavoice;
for lots of 500 lbs, and over 8% for cash
if paid in 15 days from date of invoice;
for lots of less than 500 lbs. net.
Lead White, Dry in bbis
Zine American dry W h 454@ 474
Zinc, French:
Paris, Red Seal. dry7%
Paris, Green Seal, dry
Antwerp Red Seal, dry
Antwerp ned Seat, dry
Antwerp, Green Seal, dry
Zine, V. M. French. in Porpy Oil,
Green Seal:
Lots of 1 ton and over11%@11%
Lots of less than 1 ton1119@12
Zine, V. M. French, in Poppy Oil,
Red Seal:
Lo's of 1 ton and over10 @10%
Lots of less than 1 ton104@1087
DISCOUNTS French Zinc Discoun's to
buyers of 10 bbl. lots of one or mixed
grades, 15: 25 bbls., 25; 50 bbls., 45.
Dry Colors.
Black, Carbon 8 5 6 610
Black, Drop, Amer 4 @ 6
Black, Drop, Eng 5 @15
Black, Ivory
Lamp, Com
Blue, Celestial P 1 4 6 6
Blue, Chinese
Blue. Prussian
Blue, Ultramarine 41/2015
Brown Spanish
Brown, Spanish
Green, Chrome, ordinary 3 6 6.
Agreen, Chrome, ordinary 3798 0.
For

PAINTS, UILS
Green, Chrome, pure
Colors in Oil. Black, Lampblack

	יוויום פטבוסונפי	
	Green, Chrome10	@15
		@24
16	Sienna, Raw	@15
~	Sienna, Burnt	@15
	Umber, Raw11	@14
16	Umber, Burnt	214
	Miscellaneous.	
10	Barytes, White Foreign,	
14	# ton \$17.50@	
74	Barytes Amer. floated 18,50@	50.00
12	Barytes, Crude, No. 1 10.00@	11.00
12	Chalk, in bulk ton 3.00@ Chalk, in bbls 100 b	3.35
796	Chalk, in bbis # 100 m	35
16	China Clay, English # ton 11.00 a	
2	Cobalt, Oxide # 100 b 9.50@	40
2	Whiting, Common. \$ 100 b .45.3 Whiting, Gilders	.57
-	Whiting, extra Gilders'586	.60
		.00
5	Putty.	
5	In bladders	1037
	In bulk	9(0)3
6	in cans 1 m to 5 m	66644
2	In cans 12 56 b to 25 b	1034
	Spirits Turpentine. In Oil bbis	
	In Oll bbis57 @	57160
11	In machine bols	57965
8.1	Clue.	
5		315
0	Common Bone 6	38
1		394
	Foot Stock, White	@ 14
1/2	German Hides	@10
6	German Division 10	240
		216
0	Low Grade	211
	Gum Shellac Cts. p.	ar lb.
1	Bleached, Commercial45	@
		Q.,
0		@60
-	Diamond I	a
	Fine Orange52	@54
V.	A. C. Garnet	@45
9-1	D. C 95	@
	Octagon R 54	@.
-	T. N	@49
7.3	V. S. O62	Ø
00	" see the First Issue of Ever	ev Me

Animal, Fish and V	ege-
Linsood, City, raw @ gal.,44	@45
Linseed, City, boiled 46	947
Linseed, State and West'n, raw42	043
Linseed, raw Calcutta seed	@65
Lard, Prime, Winter 57	659
Lard. Extra No. 1	@51
Lard. No. 2	@38
Cotton-seed, Crude, f.o.b mills.22	624
Cotton-seed, Summer Yellow, prime	To all a
prime30	40314
Cotton-seed Summer Yellow.	
Off grades	@30
Sperm, Crude	0,.
Sperm, Natural Spring	@40
Sperm, Bleache d Spring 58	●59
Sperm, Natural Spring	@62
Sperm Bleached Winter 63	@64
Tallow, Prime	@49
Whale, Crude.	@
Whale, Natural Winter 45	@46
whate meached winter	60,429
Menhaden, Brown, Strained 81	@32
Menhaden, Light Strained 32	@33
Menhaden, Bleached Winter 34	@35
Menhaden, Ex Bleached Winter 86	0.37
Mennaden, Southern	66
Cocoanus, Ceylon	@ 614
Cocoanut, Cochin	400 7
Menhaden, Southern. Cocoanut, Ceylon. Cocoanut, Cochin. Cod, Domestic. Signod, Newfoundland. See Helping.	@34
Cod, Newroundland36	%437
Red Saponified 3 3 4	4064%
Olive, Italian, bbls	€ 50
Reatstoot prime	
Palm, prime, Lagos W 3 5	4 3 0%
Mineral Oils.	
Black, 20 gravity, 25@30 cold	
tent 10 mai 11	(210